

PULP & PAPER

APRIL 1957

5 Solutions for NYPEN

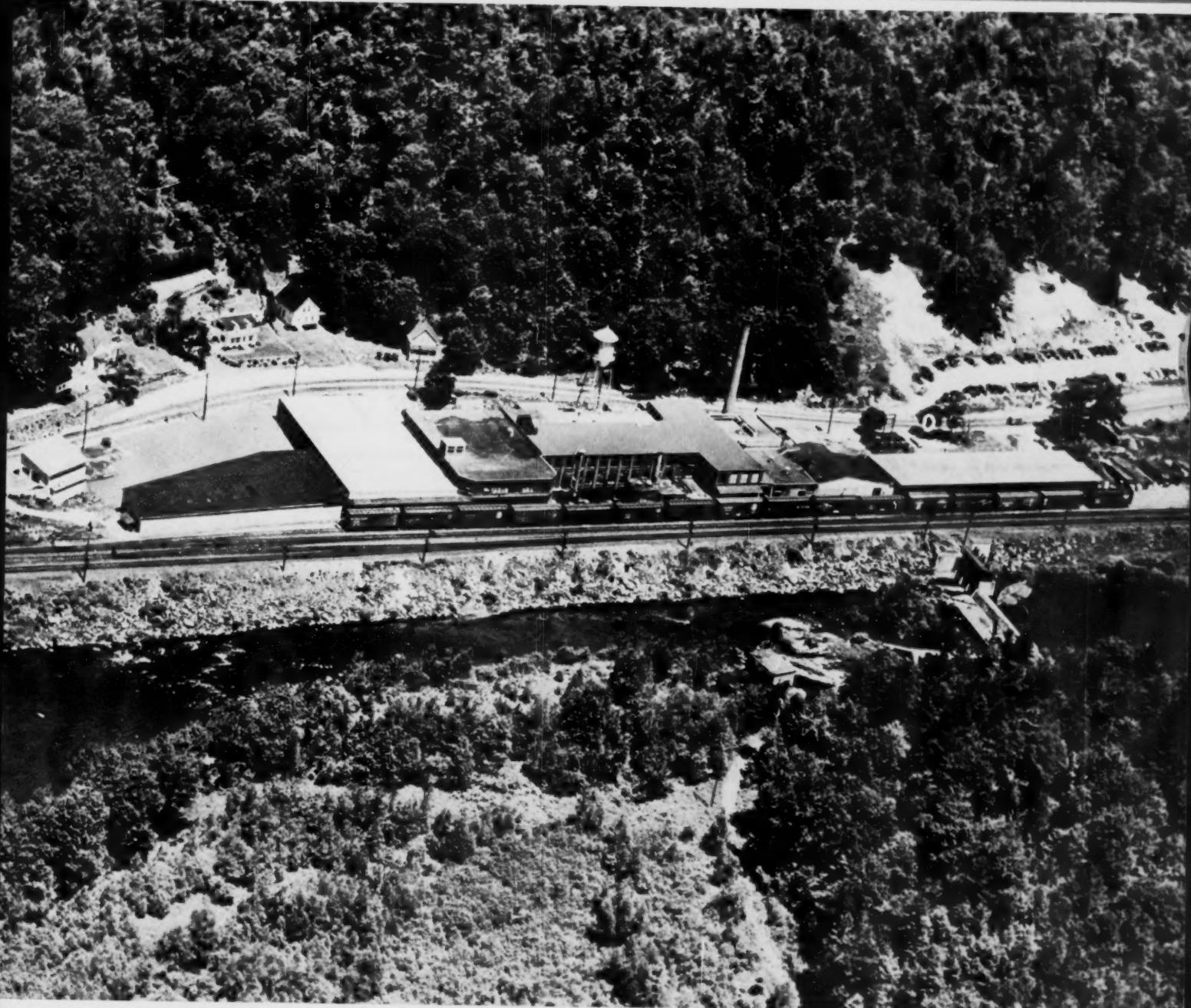
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Testing Coated Papers

page 62

Soil Bank: Pro and Con

page 142



Erving Paper Mills — Source of CZ's "Little Machine"

for this first story of the Stevens former, see page 46

*new
data proves:
UREA is
excellent for
Viscosity
Control
in paper coating*

We can show you just how effective UREA is in controlling viscosity of modified starch, casein and Alpha Protein adhesive dispersions—and in reducing thixotropic index too.

The means: actual experimental data in the form of 15 graphs prepared by our research group, and based on field trials. Two graphs are presented on the right.

This data indicates that small amounts of UREA— • give large viscosity reductions, and drastically lower the rate of viscosity increase on standing • lower thixotropic index • permit use of adhesive dispersions with higher solids content.

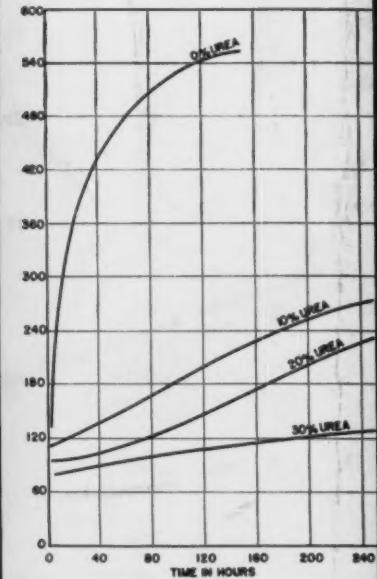


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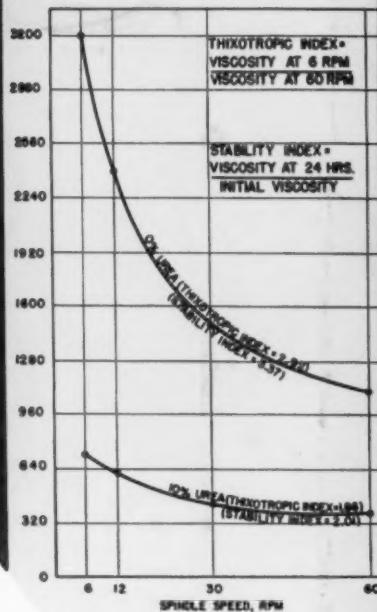
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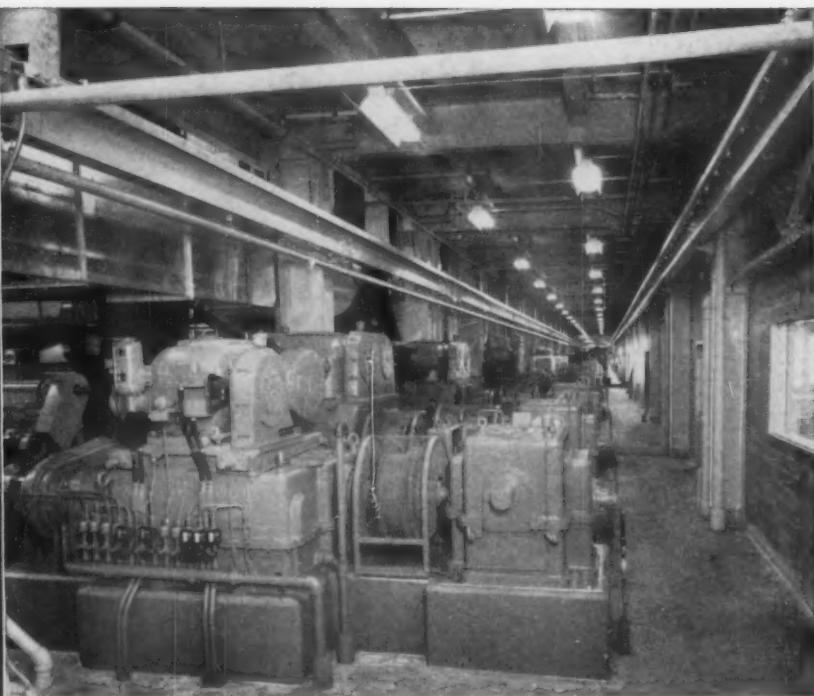
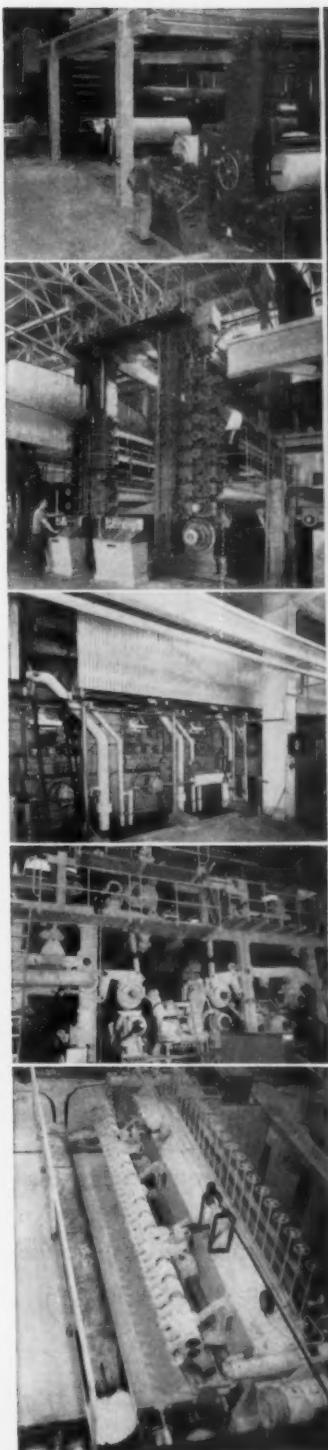
BROOKFIELD VISCOSITY IN CENTIPOISES AT 26°C.



BROOKFIELD VISCOSITY IN CENTIPOISES AT 26°C.

Because UREA is readily available, and effective, paper coaters interested in improving operations and lowering costs will want to examine this data in detail. Send for the paper "Viscosity Control of Paper Coating Adhesives with UREA" by Belche and Ellis for the complete story.

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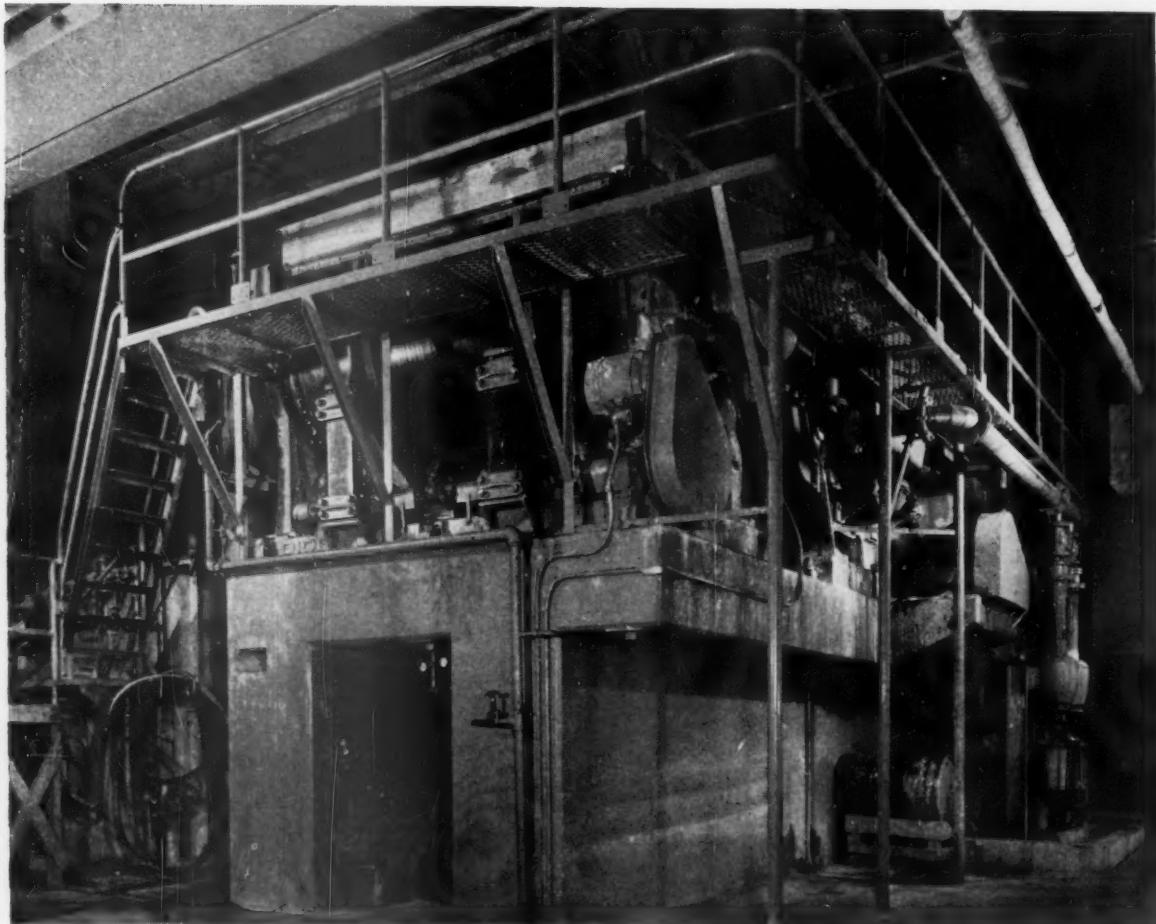
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onto the wire — the ultimate protection against foreign matter that might damage expensive equipment. They have the capacity to deliver the stock as fast as the machine can take it.

Note the neat Dirtec tailings units at the extreme right of the picture. They are standard on all modern Screen installations and they greatly increase dirt removal efficiency.

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Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

April 1957

VOLUME 31
NUMBER 4

Paper Week Points the Way—Will Industry Heed It?

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The real problem may not be overcapacity, but underconsumption. PULP & PAPER reports on formal and corridor discussions on this and other industry problems

The First Story of the Stevens Former, a Major Papermaking Change

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If safety is your business—and it is everybody's—here is frank talk on safety statistics, some safety ideas, and a few problems

How New York & Penn Makes a Good Mill Operation Better

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How five problems—of mill wastes, raw water, stock preparation, acid preparation, pulp cleanliness—were attacked and solved by Johnsonburg mill. Mill men will find this article chockful of ideas suitable for their own use

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ABOUT OUR COVER—

Erving Paper Mills on Millers River at Erving, Mass. (about 15 miles from Greenfield), where the Stevens Former—the "Little Machine That Ran Away from Home"—was put on No 4 machine, a 90-in. trim cylinder.

CIRCULATION DEPT., 500 Howard St., San Francisco 5, Calif. C. C. Baake, Circ. Mgr. Send subscription orders and changes of address to PULP & PAPER, above address. Include both old and new addresses.

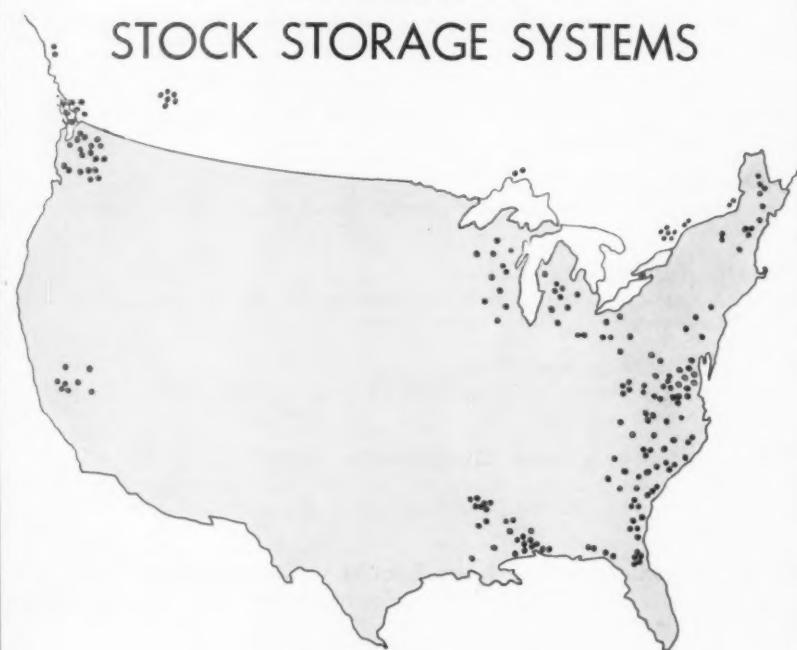
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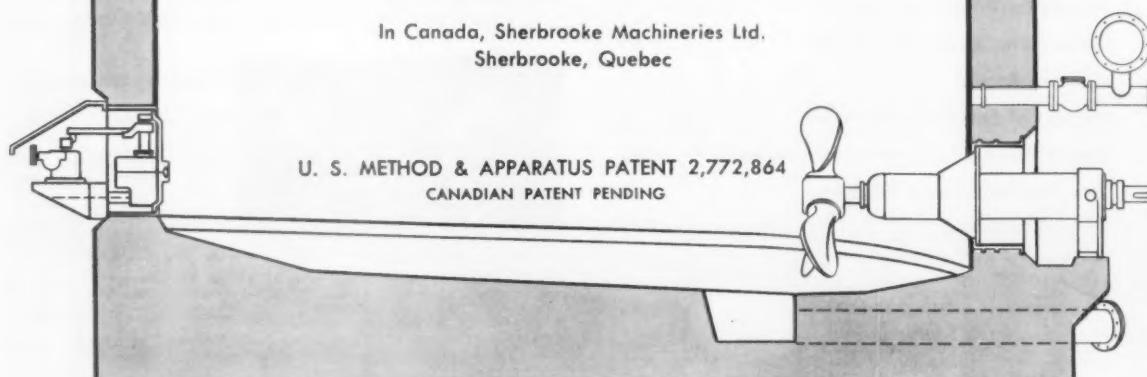
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PULP & PAPER — April 1957

Comment on Chihuahua Mill: Hardy Recommended Kraft

—Salisbury, Conn.

Editor: The article "Hands Across Border" in the February 1957 issue of PULP & PAPER was most interesting (re new Chihuahua, Mexico, kraft mill operated by Kimberly-Clark).

You may like to know that the survey made by George F. Hardy & Son in Chihuahua was with reference to a newsprint development. The result was to recommend a kraft mill instead.

The mountainous character of the country presented no particular problems but in view of the point to which the art of pulp making had developed at that time the limited amount of water available was a major consideration in the decision.

JOHN ALEXANDER HARDY

U.S. Process in Japan

—New York

Editor: As subscribers to PULP & PAPER, we have read many interesting articles regarding manufacture of groundwood from hardwood chips. We have recently sold six Bauer plants to Japan within the past six months.

We are the Export Engineering and Sales Department, on a world-wide basis, for Bauer Bros. Co., Springfield, O., and have been closely associated with them in the development of the first commercial installation of their patented groundwood system at Gould Paper Co., Lyons Falls, N. Y. The six plants we sold to Japan are essentially the same, equipment-wise, as the Gould installation.

The first was sold to Daishowa Paper Mfg. Co., in Japan, for a capacity of 70 metric tons per 24 hours, using Japanese mixed hardwoods such as beech, oak, alder, poplar, etc. The end product will be newsprint furnish and United States Machinery Co., Inc. has also furnished Impeco bleach equipment and Swenson evaporators, as well as an 85-in. 12-knife Carthage-Norman chipper.

The other five mills will each have a capacity of 35 metric tons per 24 hours, also using Japanese mixed hardwoods. Three of these will use camphor logs after camphor extraction, utilizing hardwood fibers heretofore considered a waste material.

The Bauer process produced from chips, pulps with all of the characteristics of groundwood prepared by conventional methods at lower cost, requiring less labor and capital expenditure per ton of groundwood.

J. DILLIN
United States Machinery Co.,
Inc.
90 Broad St., New York 4, N.Y.

Big Plans in Brazil

—Fortaleza, Brazil

Editor: A few months ago a French Mission including representatives of the Société Isorel and the Rothschild's banking interests of Paris, France, arrived in Belém to study the possibility of utilizing the vast timber resources of the Amazon Valley as a source of raw material for the pulp and paper industry. Plans are well advanced and the government of the State of Pará have subscribed five million cruzeiros of the initial capital of the Industria do Papel do Pará which is being organized. The Société Isorel will supply the machinery and technical staff of this new enterprise. They plan to use the new soda-sulfur process recently perfected for pulping heterogeneous mixtures of tropical hardwoods by the Régie Industrielle Cellulose Coloniale in their pilot plant at Bimpresso near Abidjan on the Ivory Coast, French West Africa.

It is reported that a group of National Chinese capitalists are going to install a small pulp and paper mill at Parintins, Pará. The machinery for this plant was removed from Shanghai before the Communists took over.

Last month Yasunkuni Yasuba, director and executive vice president of Sanyo Pulp Co., Ltd. of Tokyo, Japan, visited Belém to study the potential pulp resources of the Amazon Valley. West German paper companies have recently shown interest in this region.

Owing to these recent developments, it occurred to me that American firms may also be interested in the pulp and paper resources of this region. I have had 9 years experience as a forester and wood technologist in the lower Amazon Valley and the results of my investigations are available to anyone interested.

EUGENE F. HORN
Consulting Forester
Rua Marcos Mamedo 630
Aldeota, Fortaleza,
Ceará, Brazil.

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Nitric Acid
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OVER 20 MACHINES FOR SOUTH . . . That was a report from reliable sources at Paper Week. Of course, a few may be cancelled.

TARGET DATES . . . St. Regis staff will be making Hi-Brite market pulp at Hinton, Alberta (North Western Pulp & Paper Co.) as you read this. Started up in early March. The 1,000 tons-per-day board machine at St. Regis, Jacksonville, is due to start up in late May. Rayonier's second pulp machine at Jesup, Ga., will go in early fall. Riegel Carolina Pulp's first paper machine will be ready late-1957. Housing will be up in May, power is in for it now. IP started its No. 6 kraft machine at Mobile in February; its Mobile newsprint machine started in November.

MERGER LAW VIOLATION when it acquired St. Helens Pulp & Paper Co. has been denied by Crown Zellerbach Corp. Key issues in the litigation involving an amendment to the Clayton Act have never been ruled upon, says C-Z, confident that it will be successful in holding on to St. Helens.

FIBREBOARD EXPANSION PROGRAM . . . William L. Keady, president, Fibreboard Paper Products Corp., announces a \$50,000,000, five-year expansion program. \$30-35 million to be spent on two pulp and paperboard plants; one in Humboldt County, northern Calif., with completion scheduled in three years. The second will be in central California's Sacramento valley. About \$5 million will be put into expanding the Fabco div. and an undisclosed amount will go for a streamlined carton plant in the South Gate area of Los Angeles. A creative design center is to be built in Contra Costa area across the bay from San Francisco, as a customer service. The plan will require no outside financing.

SYNTHETIC-FIBER PAPER WITHIN A YEAR . . . The Du Pont Co. and some paper manufacturers predict commercial production of paper from synthetic fibers soon. Says Du Pont, synthetic fiber papers will be confined to specialty paper and woven fabric markets, with little encroachment on existing paper fields.

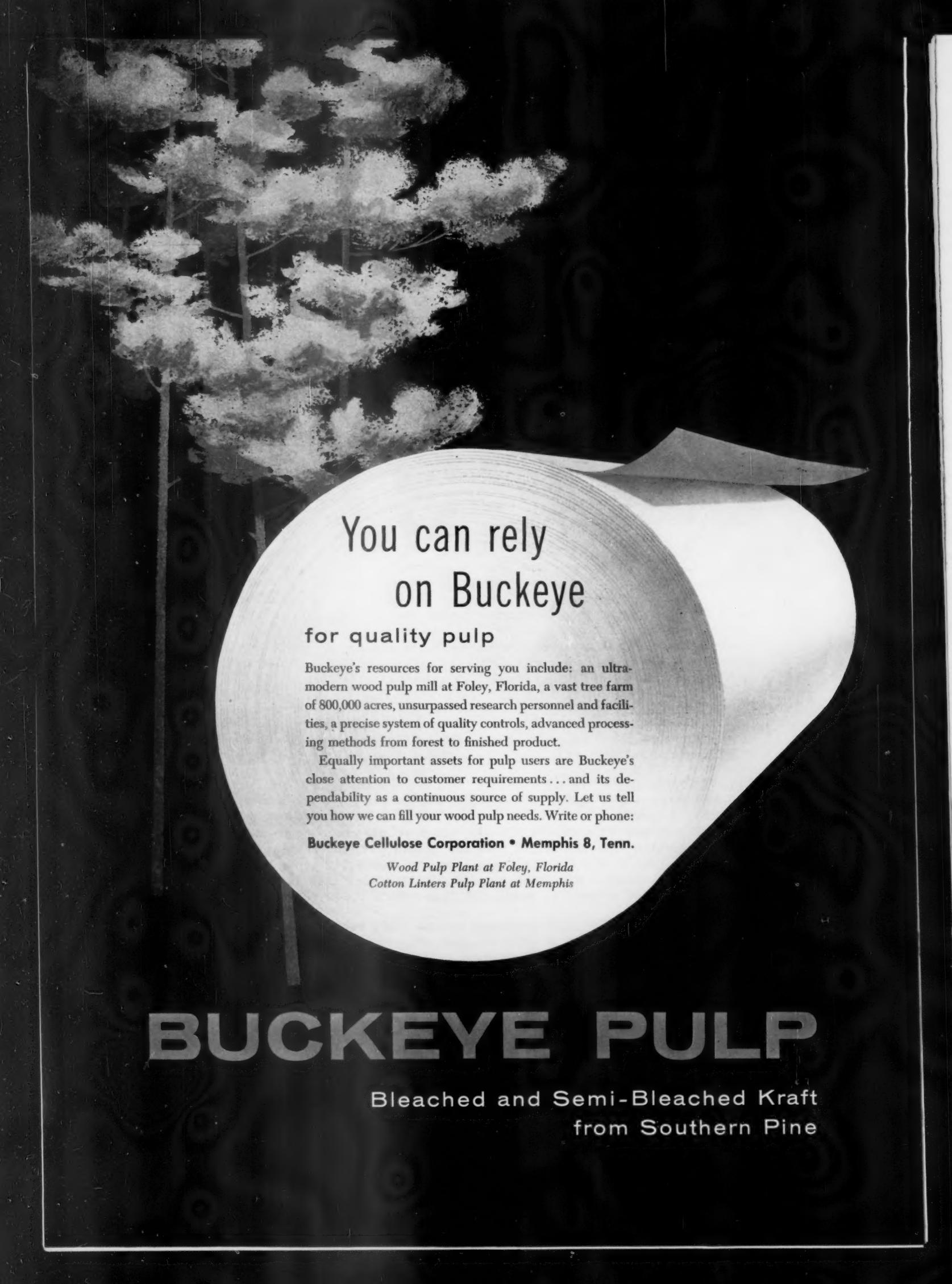
U.S. PULP, PAPER PRODUCTION HIT NEW HIGHS IN '56 . . . according to a preliminary report by Bureau of the Census. Some 31,335,853 tons of paper and board were produced, compared to 30,140,190 tons in 1955. Woodpulp production climbed to 22,121,285 tons from 20,739,696 tons the previous year. Paper and paperboard production were 13,891,356 tons and 14,255,675 tons respectively, compared to 1955 totals of 12,895,394 tons and 13,865,112 tons. Unbleached kraft production was 2,830,000 tons; 100,000 tons more than in '55. Waste paper consumption dropped to 8,860,695 from 1955's 9,040,768 tons.

CANADIAN PULP EXPORTS SET NEW HIGH in volume during 1956, totaling 2,374,077 tons, about 8,000 tons more than in 1955. But U.S. pulp exports dropped 68,809 tons to a 1956 total of 535,097 tons.

DU PONT TO BUILD NEW CELLOPHANE PLANT . . . with 50,000,000 lbs. per year capacity near Tecumseh, Kansas, east of Topeka, for operation early in 1959.

HAMMERMILL TO BUILD NEW OFFICES . . . Construction will begin this spring on two new office buildings for Hamermill Paper Co., Erie, Pa. Rust Engineering Co., Pittsburgh, is engineer-constructor and Daniel, Mann, Johnson and Mendenhall of Los Angeles, Calif., architects. A four-story T-shaped building of glass

Please turn page for more



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BUCKEYE PULP

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from Southern Pine

— continued

and metal walls will house administrative offices and a second one-story building of similar construction will contain offices for the Erie plant. The cost: more than \$1,000,000; occupancy: 1958.

AUGUST START-UP FOR CHARLESTON MACHINE . . . West Virginia Pulp & Paper Co. plans to spend about \$22,000,000 for expansion of Charleston, S.C., plant. The new \$10,000,000 machine will be the third for this mill and will raise production to 1,200 tons of kraft papers daily.

WASTE SULFITE LIQUORS FOR CATTLE FEED . . . Engineers at Oregon State College, Corvallis, have discovered a process still in the development stage for treating waste liquors to make a protein concentrate which might be used as a livestock feed supplement.

BASIS FOR MERGER ANNOUNCED . . . Ten shares of Weyerhaeuser Timber Co. stock for one share of Eddy Paper Corp. stock, and merger of Eddy into Weyerhaeuser are the terms of the merger, Walter Kieckhefer, Eddy president, announced. Basis for the merger of Kieckhefer Container Corp. into Weyerhaeuser has not been revealed.

KIMBERLY-CLARK GETS SWISS SUBSIDIARY . . . John R. Kimberly, pres. of Kimberly-Clark Corp., and Louis P. Schweitzer, pres. of Peter J. Schweitzer, Inc., recently announced an agreement for Kimberly-Clark to acquire all the Schweitzer firm's capital stock from the Schweitzer family, in exchange for 735,000 shares of Kimberly-Clark common stock. A two-thirds interest in Schweitzer's French subsidiary, Papeteries de Mauduit, is included in the deal. Schweitzer makes cigarette, condenser and carbonizing papers.

HUDSON'S PALATKA MILL IN FULL PRODUCTION . . . Hudson Pulp & Paper Co.'s multi-million dollar tissue mill at Palatka, Fla., largest of its kind in the South, is now in full production, turning out 80 tons of tissue a day for toilet tissue, facial tissue and handkerchiefs. The 228-in. machine adjoins Hudson's original installation which started-up in 1947.

CHAMPION TO START NEW MACHINE IN '59 . . . New 220-in. white paper machine, designed to reach speeds of 2,000 fpm, will be in operation by early 1959 at Champion Paper & Fibre Co.'s Carolina Div. Champion is backing up new machine with improved pulp facilities, new timberland acquisitions.

PULP PRODUCTION ROSE 54% DURING 1947-1954 . . . Bureau of Census and APPA data show an increase of 6,400,000 in this seven-year period, with the South and West accounting for 92% of total national increase from 11,900,000 tons to 18,300,000 tons. In most regions number of pulp producing firms rose slower percentagewise than pulp production, showing trend toward larger pulp producing units.

IMPROVEMENTS IN FLINTKOTE . . . A new 20 ft. continuous Shartle Hydrapulper has been installed at the Los Angeles plant of Flintkote Co. Main purposes, according to John Van Ounsem, mill mgr., are greater cleanliness, improved quality, more efficient use of manpower. A 300-hp EM electric motor drives the Hydrapulper. Flintkote is also putting in a new Slushmaker pulper, made by Morden Machine Co., Portland, Ore., to serve the No. 3 machine.

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for
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application

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ledger

index

cover

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continued

FREIGHT RATES GO UP . . . The Interstate Commerce Commission recently authorized a 5% (with a few exceptions) increase in interstate freight rates on intra-territorial traffic moving wholly within the south, for all railroads operating in the south (east of the Mississippi River). Some southern region railroads have petitioned the ICC for a 15% increase, to include the 5% now authorized. Eastern and western railroads now have pending with the Commission a petition for an over-all increase of 22%, including increases granted in December, 1956.

P&G MANAGEMENT WINS LAURELS . . . The American Institute of Management recently cited Procter & Gamble as the best managed company in the U.S. P&G has been on AIM's list of ten best managed firms every year since the ratings were first issued seven years ago. The Institute revealed the top ranking company for the first time this year because a second audit confirmed findings on P&G of five years ago.

BOWATERS COMPLETES ARRANGEMENTS FOR NUMBER 4 . . . Eleven U.S. insurance companies have okayed a plan to take up \$14 million in 20 year, 5% first mortgage bonds to help finance a \$21 million expansion at Bowaters Southern Paper Corp. Plans include a fourth newsprint machine, already announced (No. 3 started up in January). Fourth machine will boost production at Calhoun, Tenn., mill to 435,000 tons a year, make it one of world's largest. American banking group headed by J. P. Morgan & Co., Inc., will provide additional \$7 million.

DIXIE CUP MAPS \$3 MILLION PLANT IN LEXINGTON, KY. . . . Dixie Cup Co. will build a \$3 million manufacturing and storage plant at Lexington, Ky., target date for completion: January 1, 1958. Plant will service east central U.S.

TALL OIL PLANT IN GEORGIA . . . Hercules Powder Co.'s tall oil fractionation plant at Savannah, Ga. is now operating at rated capacity, according to John M. Eagan, plant mgr. The plant, which manufactures resins, purified fatty acids and related products from crude tall oil, is operated in conjunction with Hercules Paper Makers Chemical Dept. plant on Louisville Rd. Operations began last year at another tall oil plant built by Hercules at Franklin, Va.

ST. REGIS GETS CUTTING RIGHTS . . . St. Regis Paper Co. has concluded a 60-yr. timber cutting agreement on 100,000 acres of Alabama timberlands belonging to the Frank Boykin family of Mobile. St. Regis will manage the timberland and will expand the present planting program.

FORECASTS 7,000,000 TONS NEWSPRINT CONSUMPTION IN '57 . . . H. B. McCoy, administrator of business and defense services, in a report to House of Representatives Commerce Committee, said supply may exceed demand by about 125,000 tons this year, in spite of increased consumption. He also said newsprint price has increased about 80% from 1926 to Dec. 1956, using Bureau of Labor Statistics price index data. The average of all commodities has increased about 81%, total pulp, paper and products group (including newsprint) has gone up about 109%. Cranston Williams, gen. mgr. of American Newspaper Publishers Assn. says that Mr. McCoy's forecast of a surplus is based on an understatement of newspaper requirements; instead of an excess there is likely to be a shortage.

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here's how!

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ALWAX Sizes are a group of acid- and alkaline-stable aqueous emulsions of paraffin and microcrystalline waxes with 40 to 50% solids content.

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Beater Application is particularly desirable, as moderate amounts of these size additives can be incorporated without producing undesirable surface slip.

Size Tub Application is commonly practiced by adding the emulsion with a thin boiling starch solution to improve surface qualities and increase water repellency. Proteins can be used in conjunction with alkali-stable emulsions.

Calender Box Application on paperboard uses combinations of starch and acid-stable ALWAX. High water repellency is produced by ALWAX alone at greater concentrations.

Clay Coatings benefit from the addition of certain ALWAX emulsions to the starch, casein or protein. The ALWAX alone is added to the coating mixture after mechanical treatment.

Emulsion Stability is excellent, even under the mechanical, heat and chemical conditions met in papermaking.

Detailed recommendations on specific size applications are contained in Cyanamid's 12-page Technical Bulletin, "ALWAX and WAXINE Sizes." For your copy, write to the address below.

*Trademark

CYANAMID
AMERICAN CYANAMID COMPANY
PAPER CHEMICALS DEPARTMENT
30 Rockefeller Plaza, New York 20, N. Y.

In Canada: North American Cyanamid Limited
Toronto and Montreal

—continued

ST. REGIS PAPER MAY GET TACOMA FIRM if a recent offer to acquire all outstanding common stock of St. Paul and Tacoma Lumber Co., Tacoma, Wash., is accepted. The 69-year-old lumber firm has a plywood mill at Olympia and a sawmill and drying kiln at Tacoma for producing fir and hemlock lumber and wood chips, and 133,700 acres of timberlands.

HIALEAH CONVERTING PLANT DEBUTS . . . New corrugated container plant of Miami National Container Corp. was recently previewed for a "live" audience for the first time since it started producing last fall. Owens-Illinois and National Container executives were present for the public showing of plant expected to turn out 240 million sq. ft. this year.

NEW CANADIAN SUBSIDIARIES have been incorporated by Parsons & Whittemore, Inc., New York. Parsons & Whittemore Industries Ltd. and Parsons & Whittemore-Lyddon Co. will both have head offices in Saint John, N.B. P&W says it has no intention at present of entering paper mill construction field in Canada.

HAMILTON PAPER PLANS EXPANSION . . . with a high speed paper machine, warehouse and shipping facilities, new finishing operations and a new boiler plant at its Miquon, Pa. mill, for a cost of \$4,500,000. The paper machine will produce about 120,000 lbs. per day, bringing the company's total daily capacity to about 650,000 lbs.

TEXAS PLANT AHEAD OF SCHEDULE . . . All below grade level structures are practically complete at Southern Pine Lumber Co.'s new fiberboard plant in Diboll, Texas, Carroll Allen, company engineer in charge of construction, reports. Target date is January, 1958.

MEAD MOVES FURTHER INTO CONTAINER FIELD with directors of The Mead Corp. approving an agreement for their wholly-owned subsidiary, Jackson Box Co., Cincinnati, to take over the Industrial Container and Paper Corp. of Chicago. Industrial Container's Pres. Richard Norian continues as gen. mgr. of the corrugated box plant (to be known as Chicago Div. of Jackson Box Co.), and becomes v.p. of Jackson Box.

ARMSTRONG CORK PLANS MAJOR EXPANSION PROJECT to increase production of acoustical ceiling tile at their Macon, Ga. plant, according to H. R. Peck, vice pres. and gen. mgr. of Building Materials Operations. A one-story building with 72,000 sq. ft. of floor space is scheduled for production by late July, Mr. Peck said.

RHINELANDER PLANS POWER EXPANSION . . . John E. Becker, v.p., announces a \$4,000,000 power plant expansion program for Rhinelander Paper Co. The work, to start next fall and scheduled for completion in spring, 1958, includes installation of a 10,000 kw capacity turbine and a 260,000 pph steam boiler to operate at 1,500 lbs. per sq. in. pressure at 950° temperature.

EMBRY CONTAINER EXPANDS . . . Pres. William C. Embry announces a half million dollar expansion program by Embry Container Corp. of Louisville, Ky., which began manufacturing operations less than two years ago. Embry is affiliated with Alton Box Board Co., Alton, Ill. Plans include a new 85-in. corrugator, additional printing and sealing machinery, and construction to house a new boiler plant.



Quality Control at Eastex Assures a Better Product



Uniform Let the Chips Fall . . .

Wood chips, uniform in size, cook evenly — resulting in more uniform bleaching for a better quality pulp and paper.

Under its program of Quality Control, Eastex maintains this uniformity through careful attention to every detail. Thus, meticulous concern extends from selection of wood

through automatic cooking of chips, bleaching of pulp to the ultimate production of market pulp and a wide range of special board grades.

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EAST TEXAS *Pulp and Paper Company*

Direct from Moscow—New View of Russia's Paper Industry

Direct from the Moscow *Pravda* via a special translation for PULP & PAPER comes an editorial exhorting the nation to utilize reserves of the paper industry more fully. After first stating that the Communist party has organized the publication of newspapers, social, political and technical literature on an unprecedented scale, the editorial goes on to point out some flaws in the system.

Various paper machines have been idle for years. Two machines that could produce tens of thousands of high quality clay coated printed paper annually have not been in use at Kama for several years. At the Krasnogorodskoye Paper Mill, three machines stood idle more than 2,000 hours, not called for by the plan. Imported paper machines at some mills are now obsolete and require substantial modernization.

In Archangel Province, 20% to 25% less pulp is obtained per cubic meter than at enterprises in Tallinn and Kaliningrad, with the result that some 440 tons of pulp fiber are lost as waste annually. They still do not stir up chips by steam, underestimate the importance of correct regulating of chipper, do not apply proven method of forced circulation of cooking liquor and tolerate obsolete design of chip thickeners in digesters. In Balakhna hot liquid defibering has been unwarrantedly forgotten.

UN Report on Europe's Mills

At its 14th session, the Timber Committee of the Economic Commission for Europe, Food and Agriculture Organization of the UN, reported that many pulp and paper plants in Europe are dependent on wood imports. There is a definite trend to construct modern pulp and paper plants close to the source of timber. This conversion is worrying owners of older operations and their employees, as there still is a chronic unemployment problem in many parts of Europe, says Walter Lentholt, Spokane, Wash., lumberman who attended.

Burma Project Needs Money

Plans for a 100-ton or 150-ton per day bamboo pulp and paper mill near Akyab, Burma (reported in PULP & PAPER 1956 World Review Number)

are floundering because the Burmese group has been unable to raise its share of funds to finance the project, according to Albert Hattis of Robert E. Hattis Engineers, Inc., Chicago.

The Hattis company agreed to put up half the cost. The Burmese people tried unsuccessfully to borrow their half from the World Bank and are now seeking the money from both government and private sources in the U.S.

Cuba Gets New Tissue Mill

Joseph E. Atchison of Parsons & Whittemore, Inc., says a new mill is being erected for Industria de Papel Carton y Envases, S.A., at Real 68, Puentes Grandes, Havana. The company is owned by Rafael Palacios and directed by Enrique Cabanes, president, and Manuel Zapico, vice president. The mill is being equipped entirely by Black-Clawson Co. Mr. Atchison said that it should be the most modern tissue mill in Latin America.

Chile to Get Cellulose Plant

Plans to build a \$350,000 cellulose plant in Santiago were announced recently by K. F. Landegger, president of Parsons & Whittemore, Inc. It is scheduled to begin operating in two years. Parsons & Whittemore and other U.S. and Canadian firms have been studying the possibilities of developing forest resources in Chile for several years.

New Swedish Construction

Ab Klippans Finpappersbruk, fine-paper mill, reports that work on rebuilding and modernizing paper machines is proceeding at the Klippan and Lessebo mills, and a new sawmill is being erected at the Lessebo Skogar subsidiary. The Konga plant, including land and dwelling houses, was sold to Stalpressnings, AB, of Olofstrom, in the past year.

Translations in 16 Languages

A new department to handle translations in 16 languages in the fields of pulp and paper is announced by Chemical Translating Service, 881 Lytton Ave., Palo Alto, Calif. All translators are bilingual chemists or chemical engineers with working knowledge in cellulose, paper, etc. The firm handles some 16 languages, including all Scandinavian, Russian, Chinese and Japanese. Rates are \$10-

15 per 1000 words for European languages, \$20 for Oriental.

British Catalog Sprouts Wings

A special airmail edition of a comprehensive trade catalog has been put out by Consolidated Pneumatic Tool Co., Ltd., 232 Dawes Rd., London S.W. 6. Even though printed on fine airmail paper with pictures on every page, the show-through is very slight. The firm manufactures drills, riveters, compressors, grinders, balancers, etc.

Named Marketing Director

Tom Cauter has been named director of marketing, paper division, of Latin American Paper and Chemical Group, W. R. Grace & Co. Mr. Cauter was formerly managing director of British Market Research Bureau, Ltd., a subsidiary of J. Walter Thompson Co. Ltd. in London.

Grace is currently planning the construction of pulp and paper mills in Puerto Rico, Colombia and Brazil, and operates a box plant in Puerto Rico and paper converting plants in Cuba and Peru.

Finnish Paper to France

Karhula Engineering Works, of Messrs. A. Ahlstrom Osakeyhtio, has contracted to deliver a finepaper machine to Papeteries du Bouray, France, in spring 1958. Its trimmed working width is 3,520 mm. (139 in.) and construction speed 400 m./min. (1,312 fpm). The machine will produce about 35 tons per day of tissue and toilet paper and other thin papers. It will be delivered complete from headbox to rewinder.

Karhula Engineering Works specializes in design and construction of machines for various finepaper qualities.

New B-D European Offices

Fred Enders, president of Bulkley Dunton Pulp Co., New York, announces the opening of new offices in Paris, Stuttgart and Zurich. Emile Gaillet will direct the Paris office at 126 Boulevard Periere, Paris 17, while Rudolf Walti will manage the one at 25 Schlossstrasse, Zurich. Both men have had wide experience in international pulp trade. The Stuttgart office is at 75/1 Stuttgarterstrasse, Stuttgart-Steinbrunnen. The firm already has offices in London and Stockholm.

West End **SALT CAKE**
merits your
confidence for its
consistent purity

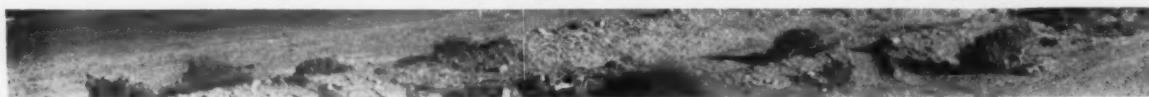
Here is the new high standard of salt cake quality achieved by exclusive West End production techniques and controls. The product is pure white and exceedingly low in heavy metal content. It is guaranteed 99½% minimum Na_2SO_4 yet actually runs 99.75% to 99.8% Na_2SO_4 typically. We invite your attention to the adjacent typical analysis and welcome your communication.

TYPICAL ANALYSIS

Na_2SO_4	99.5% or better
Na_2O	.05% max.
B_2O_3	.05% max.
NaCl	.07% max.
Insoluble	Trace
Loss on ignition	Less than 0.1%
Solution	Clear
Color	White



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EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIF. • PLANT, WESTEND, CALIF.
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HERCULES DEFOAMERS ARE MADE WITH YOUR PROBLEMS IN MIND

No matter what your foam problem, there is a Hercules defoamer to solve it.

From the pulp mill through to the paper machine, each Hercules defoamer has been designed to meet some specific requirement. If your needs should call for special products or special handling, our research facilities and the services of a technical representative are available to help you find the answer.

We'll be glad to analyze your foam problems on the spot—right in your mill, using such apparatus as this foam tester, developed exclusively by Hercules. And recently we have designed automatic equipment for preparing defoamer dispersions, to serve you better. Let us work with you in establishing and maintaining foam control.

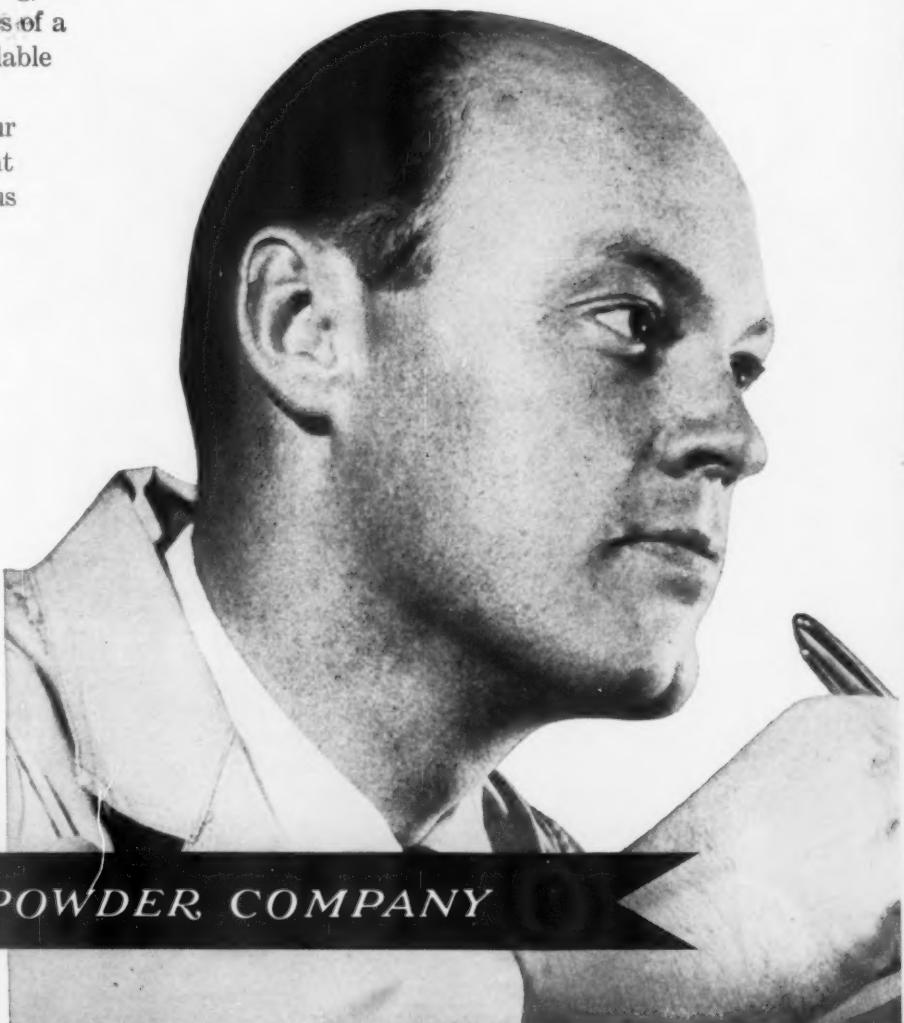
**Hercules is the acknowledged leader in rosin size and other chemicals for papermaking.*

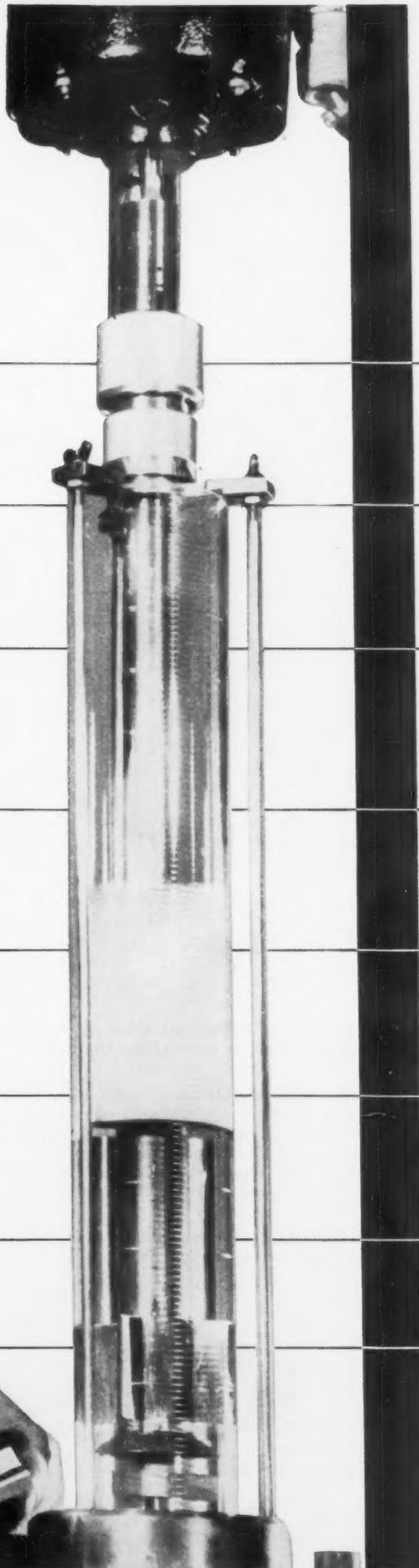


*Paper Makers Chemical Department
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PP57-1

HERCULES POWDER COMPANY





SOME REASONS FOR HERCULES LEADERSHIP

UNEQUALED TECHNICAL SERVICE

A staff of more than 50 technically trained men are thoroughly grounded in the cumulative experience of 40 years' mill and laboratory service to the paper industry. Such company experience results in an understanding of the requirements of the paper industry and is reflected in the variety and dependable quality of the products designed to meet them. One of these men is always as near as your telephone.

FORWARD-LOOKING CHEMICALS

From Hercules research come new products designed to anticipate your needs for improved chemical materials. Whether it is a new grade of size based on rosin or a completely new concept, you can look to Hercules for progressive leadership.

UNMATCHED DISTRIBUTION FACILITIES

Hercules maintains by far the largest number of plants and strategically-located distribution points of any rosin size manufacturer. This is your assurance that the product you want will be delivered when and where you want it.

A SIZE FOR EVERY NEED

Hercules' large number of sizing grades means there is one available to meet practically any requirement. For unusual problems, Hercules can formulate a custom-made grade to fit your specific need. Hercules assures you the lowest possible sizing cost by recommending the right grade for your specific needs.

PACE-SETTING RESEARCH

The most extensive research and technical service facilities devoted exclusively to papermaking are maintained by Hercules. The Hercules laboratories are always at the disposal of customers in helping to solve sizing and other papermaking problems.

HERCULES HELPS MILL OPERATIONS

Hercules has assisted in the industry's progress by designing mechanical improvements and testing equipment. The development and extensive use of the Hercules Automatic Emulsifier, for example, has resulted in major economies in the handling of rosin size.

VARIETY OF PRODUCTS

Hercules is also a leading source of other high-quality papermaking chemicals. Wax emulsions, wet strength resins, defoamers—to name but a few made by Hercules—incorporate the same degree of skilled processing improvements that are found in Hercules'® rosin sizes.

DEPENDABLE SOURCE OF SUPPLY

Hercules' many facilities for producing rosin and rosin size assure you of a thoroughly dependable source of supply.

SAVINGS IN SHIPPING

Hercules has pioneered many improvements in rosin size distribution. The freight and handling savings made possible through the introduction of dry size and higher solids paste size, both in tank truck and tank car shipments, are typical examples.



FANmail!

In every mail come queries to the "Buffalo" Engineering Department about air handling problems — everything from ventilating storerooms to handling highly corrosive fumes.

It's the job of this Department to recommend the best possible equipment to solve the problem to the greatest satisfaction. And "Buffalo" Engineers do just that, day in and day out. To answer your questions, they have the know-how of 80 years at their disposal, plus the most complete line of quality specialized industrial fans in the business — the "Buffalo" line. The results bring another kind of fan mail — enthusiastic reports of full satisfaction from contractors, engineers and plant officials in every field.



"Buffalo" Type BLH Fan for
Classes II, III and IV air handling.

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VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

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in America's Largest Hopper-Car Fleet
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Your Westvaco® Soda Ash shipment is never held up by a shortage of hopper cars... because Westvaco has 300 covered hopper cars in customer service—by far the largest fleet of modern covered hopper-cars in the chemical industry.

Our modern rolling-stock hauls an extra-high quality product—free flowing, quick dissolving, low-iron, chemically-pure soda ash that saves plenty for users within our shipping area.

If you use ash, we should talk things over. We can probably offer you a bigger value for your money in Westvaco Soda Ash.

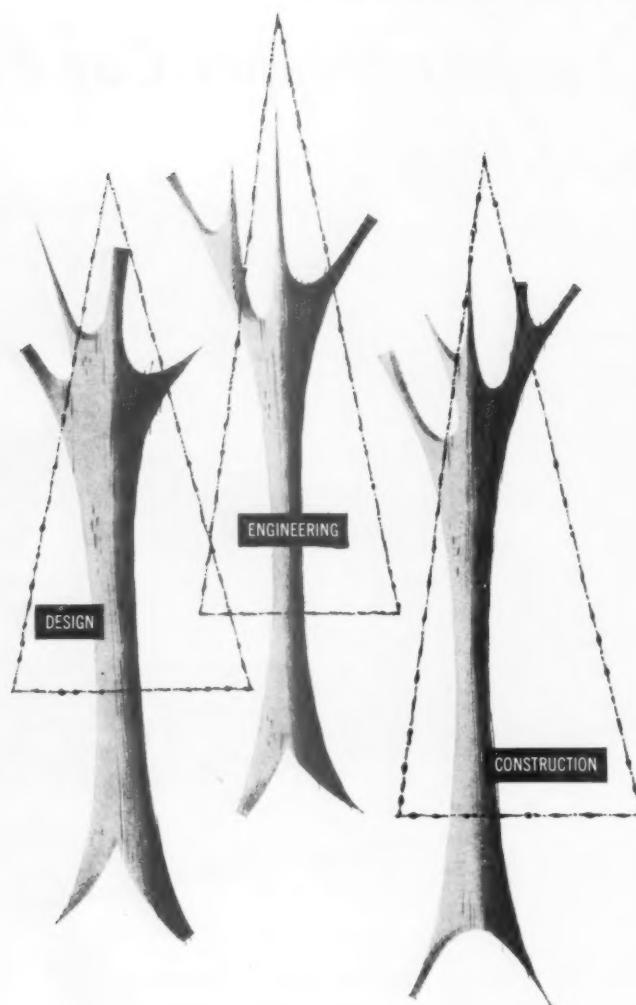
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Pritchard's familiarity with the problems of many and varied chemical processes...likewise, Pritchard's success in solving these problems...can be a big asset to you.

For years Pritchard has been tackling, and solving, problems very similar to those that may now be facing you. Problems in the design, engineering and construction of all phases of new plant construction, expansion or modernization of present facilities. This experience is available to you.

We invite you to sit down and discuss your problems with us; to tap our wealth of knowledge and experience.

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Because of their high effectiveness in removing abrasive sand and grit, bark, fiber aggregates and slivers from pulp, Bauer Centri-Cleaners* provide many "plus" advantages. For instance, users report these extra benefits:

- Clean paper within minutes of start-up, even after week-end shutdown
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Here's how to find out which Centri-Cleaner best meets your requirements. Send us a sample sheet of your paper, along with the data requested on the coupon below. We shall be glad to send you recommendations of cleaners and drawings showing typical installations.

*Manufactured under U.S. and Canadian Patents

The Bauer Bros. Co., 1706 Sheridan Ave., Springfield, Ohio

Enclosed is our sample sheet.

Daily tonnage (or gallonage) _____

Consistency at machine (1% or less) _____

End product (grade) _____

Type dirt to be removed
(Encircle on sample sheet)

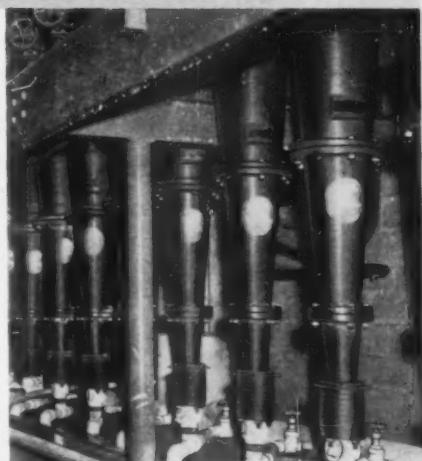
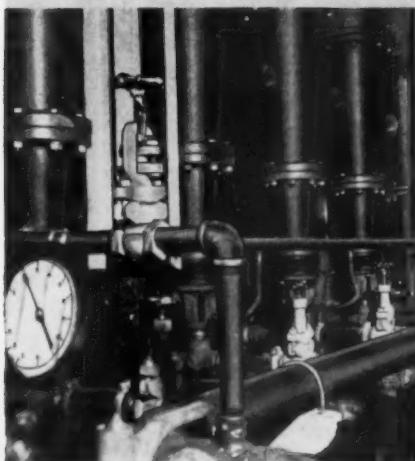
Remarks _____

Mill _____

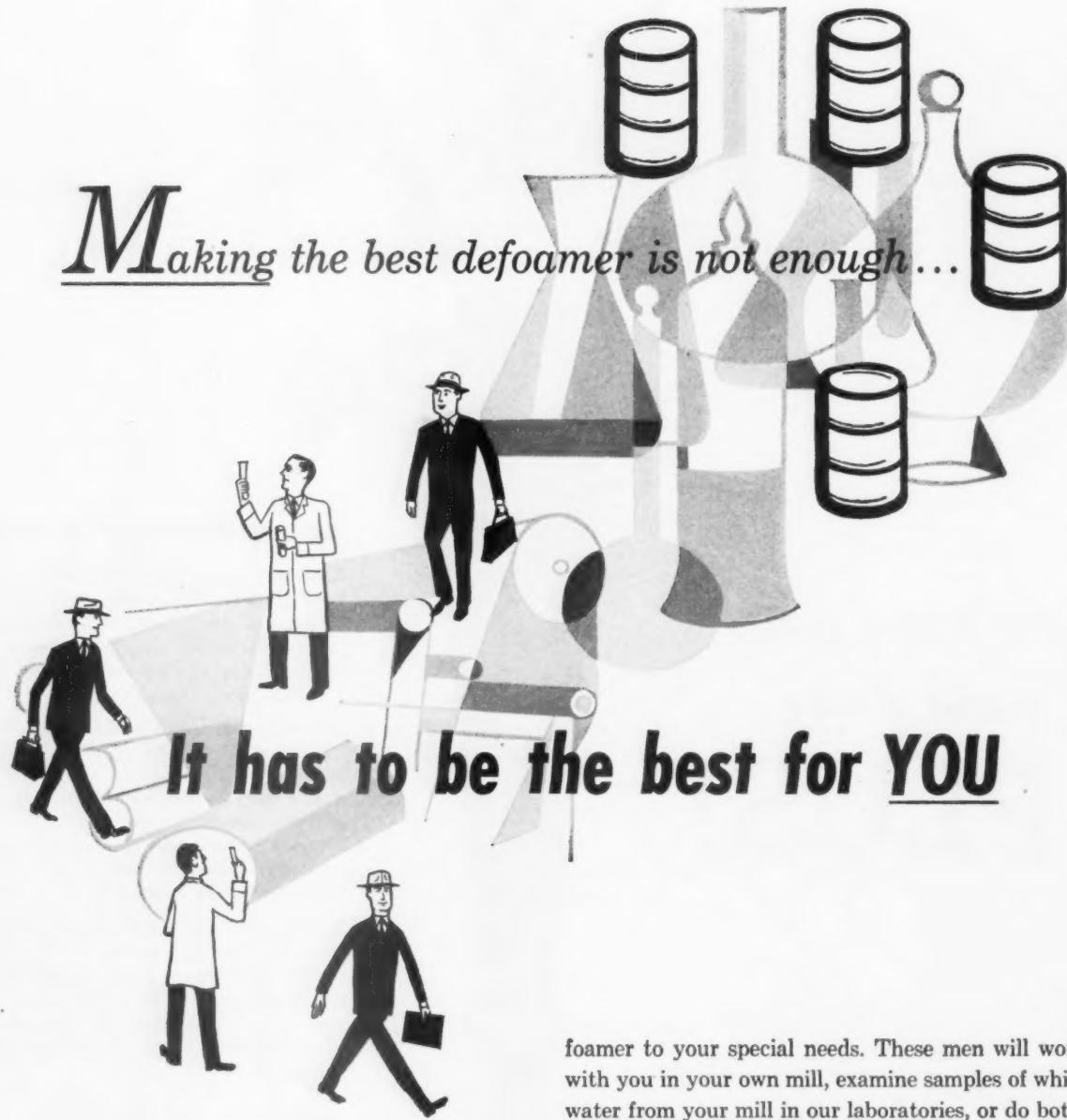
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Every paper mill must control foam—with the greatest possible efficiency—at the lowest possible cost. And since each mill differs so widely from every other mill, Nopco's Paper Division spares no effort to make certain we have a defoamer—whether paste, liquid, or flake—that will effectively, economically control foam in *your* mill.

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Western Gear equipment, designed and manufactured for the forest products industry, can save you money by reducing operating costs and maintaining uninterrupted production. Western Gear for almost 70 years has been a recognized standard in the industry. Our specialists are always available to lend their experience to help solve any mill drive problem, whether new units or in the modernization of existing installations.

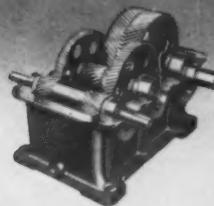
Address General Offices, Western Gear, P.O. Box 182, Lynwood, California.

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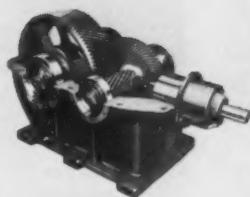
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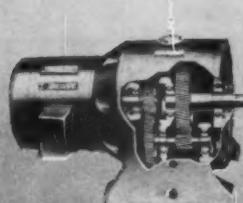
Parallel shaft speed reducer, the "Workhorse" of industry. Available in capacities to 10,000 HP.



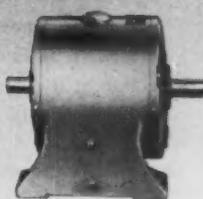
Right angle speed reducer, one of a large selection manufactured to exacting Western Gear Standards.



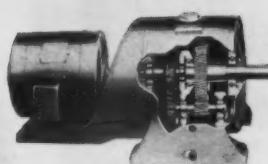
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Gear motors, from 1 to 50 HP, 520-13.5 RPM AGMA output speeds.



Strait-Line reducer, models from 1 to 50 HP.



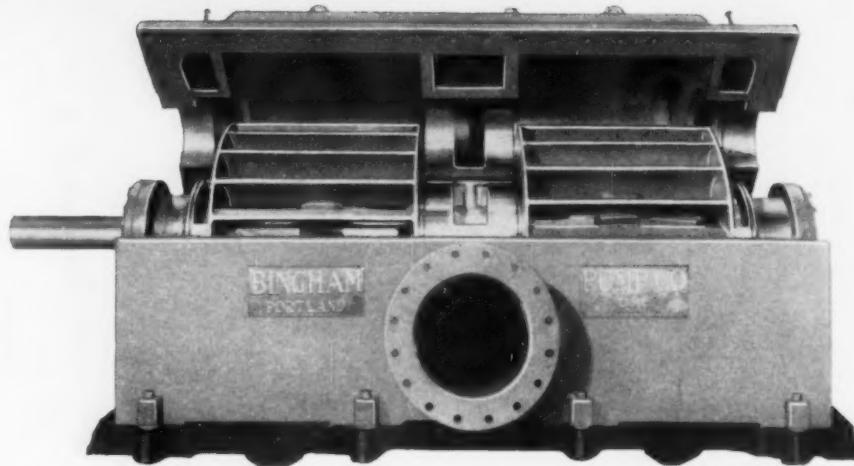
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High
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Advanced Features:

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- Higher Efficiency — Lower Power Cost
- Quiet Operation — No Drumming or Vibration
- Higher Operating Speeds — Lower Driver Costs



The Bingham Vacuum Pump, because of its double-suction hydraulically-balanced runner operating in an elliptical casing, produces a steady, non-pulsating vacuum—thereby insuring excellent performance characteristics.

The horizontally-split case of the Bingham Double Suction Vacuum Pump is a marked advance in vacuum pump design, as it eliminates the drumming usually associated with vacuum equipment. Also, with this design, the rotating element may be easily inspected by unbolting the cover section at the flange. This exclusive Bingham feature also permits the rotating element to be removed vertically as a

unit... eliminating the necessity of floor space for endwise removal of the shaft or any other rotating part.

Sealing between rotating parts is accomplished by a constant flow of sealing liquid which is supplied by the pump when operating. Bingham Vacuum Pumps are designed to operate at high speeds, directly connected to drivers, resulting in substantial reduction of driver and installation costs. The advanced design and rugged construction of Bingham Vacuum Pumps guarantee long life, high efficiency, and satisfactory performance with minimum maintenance. Call your nearest Bingham office, or write for Bulletin 16.

► **BINGHAM PUMPS DESIGNED**



Bingham Type VS Double-Suction "Double Volute" Pump for stock and white water



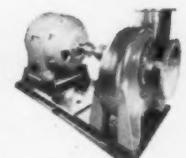
Bingham "PULP HOG" for Decker, Washer or Thickener



Bingham Type CAD Single Stage, "Double Volute" Process Pump



Bingham Type HLTL High Capacity, Low Head, Circulating Pump mounted on a "FLOATING BASE"



Bingham FAN PUMP Type HLVM

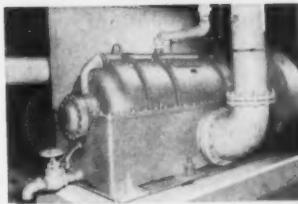


The Bingham "COMBER" for distribution of chemicals to pulp fibres

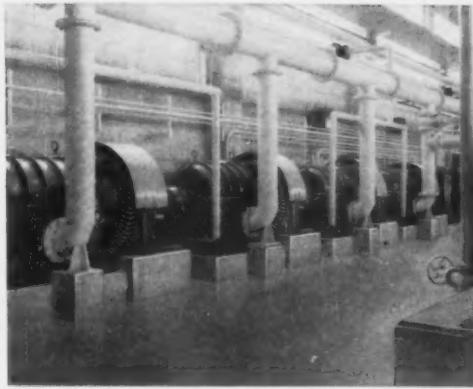
CASE DOUBLE-SUCTION

Speed Single and Multi-stage Units

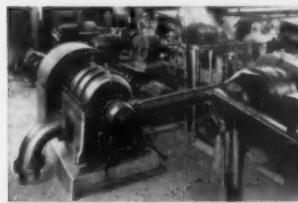
Accessibility, No Drumming, Low Driver Costs



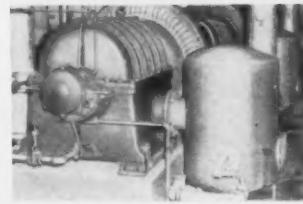
One of a group of large Split-Case, Multi-Stage, Double-Suction, Bingham Vacuum Pumps of Alaska Pine and Cellulose Pulp Mill, Port Alice, B. C.



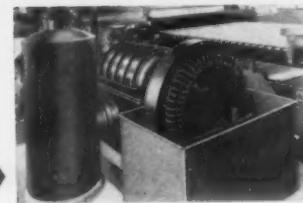
Battery of Bingham Split-Case, Double-Suction, Vacuum Pumps installed at MacMillan & Bloedel Mill, Harmac, B. C.



A typical machine room installation of a Bingham Split-Case, Double-Suction, Vacuum Pump in a large western pulp mill.



A group of Bingham Split-Case, Double-Suction, Vacuum Pumps in a large southern pulp mill.



One of several Bingham Split-Case, Double-Suction, Vacuum Pumps in Weyerhaeuser Company's pulp mill, Everett, Wash.

Partial List of
Pulp and Paper
Mills using
Bingham Vac.

Alaska Pine and Cellulose Company
American Potash and Chemical Company
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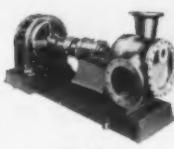
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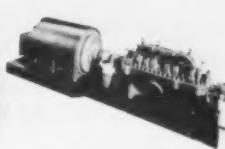
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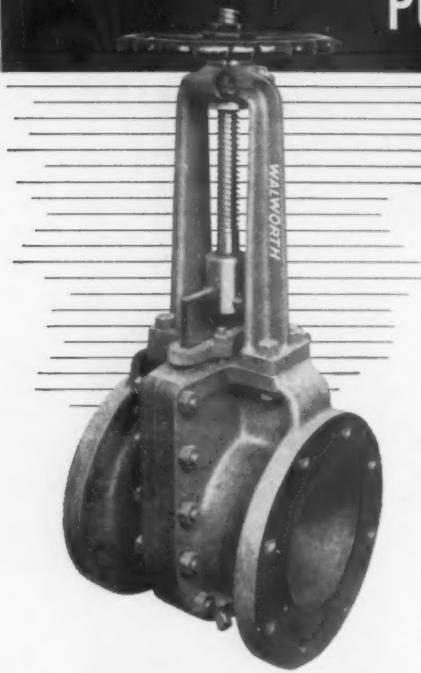


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The No. 757F can be supplied in sizes 4" to 24" inclusive — in All Bronze, Iron Body with Bronze Trim, Iron Body with Stainless Steel Trim, All Stainless Steel construction. Complete information is available from your nearby Walworth Distributor — or — write Walworth direct for a free copy of the booklet, "Walworth Valves for Pulp and Paper Mill Service".

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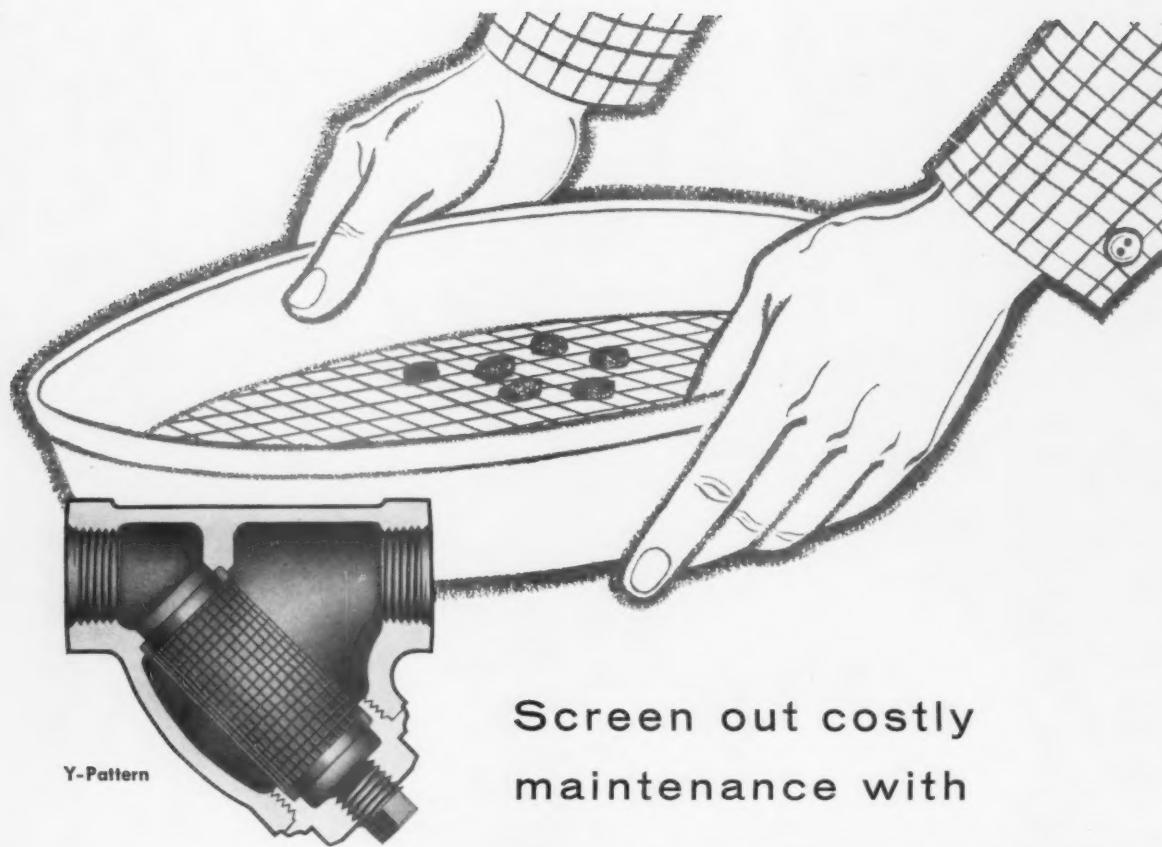
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pick, internal size efficiency, dry stiffness. Scriptite 33 produces papers with strong fold endurance.

Call on the Monsanto Paper Resins Department for experienced assistance in formulating and testing. For laboratory samples of Scriptite 33 and technical bulletin, write Monsanto Chemical Company, Plastics Division, Room 1897, Springfield 2, Mass.

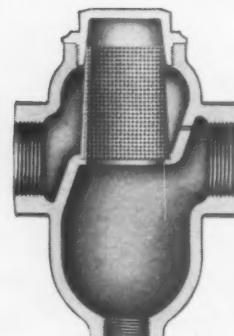


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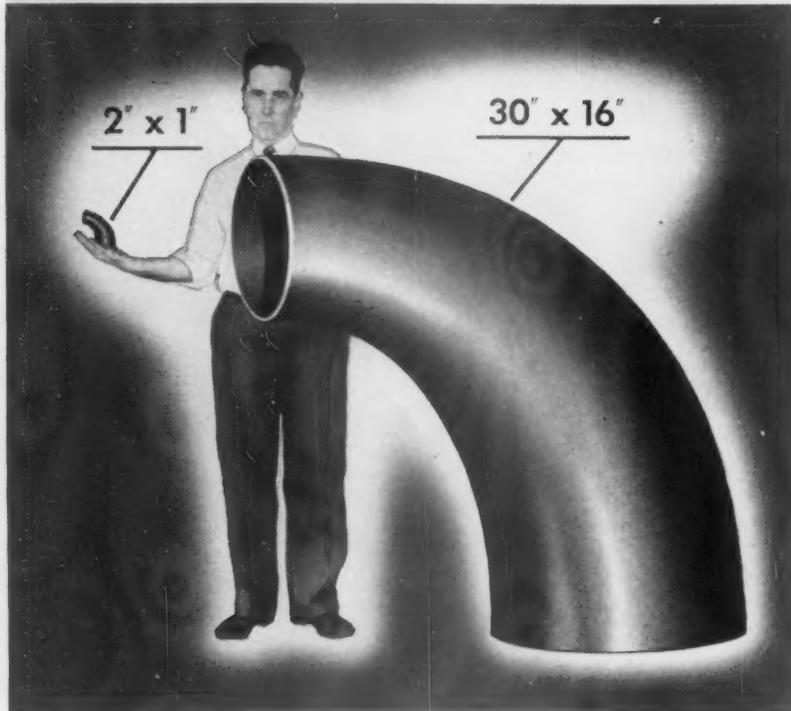
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UP TO 30"



Your demand for Midwest Reducing Elbows has dictated our decision to make them STOCK items in all pipe sizes to 30" OD and all reductions to one-half the nominal pipe size. We now have a modest stock of practically all sizes in standard and extra heavy weight, and this stock is being added to as rapidly as possible.

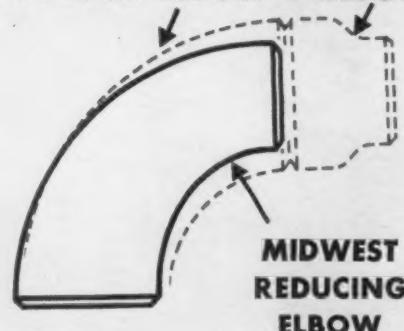
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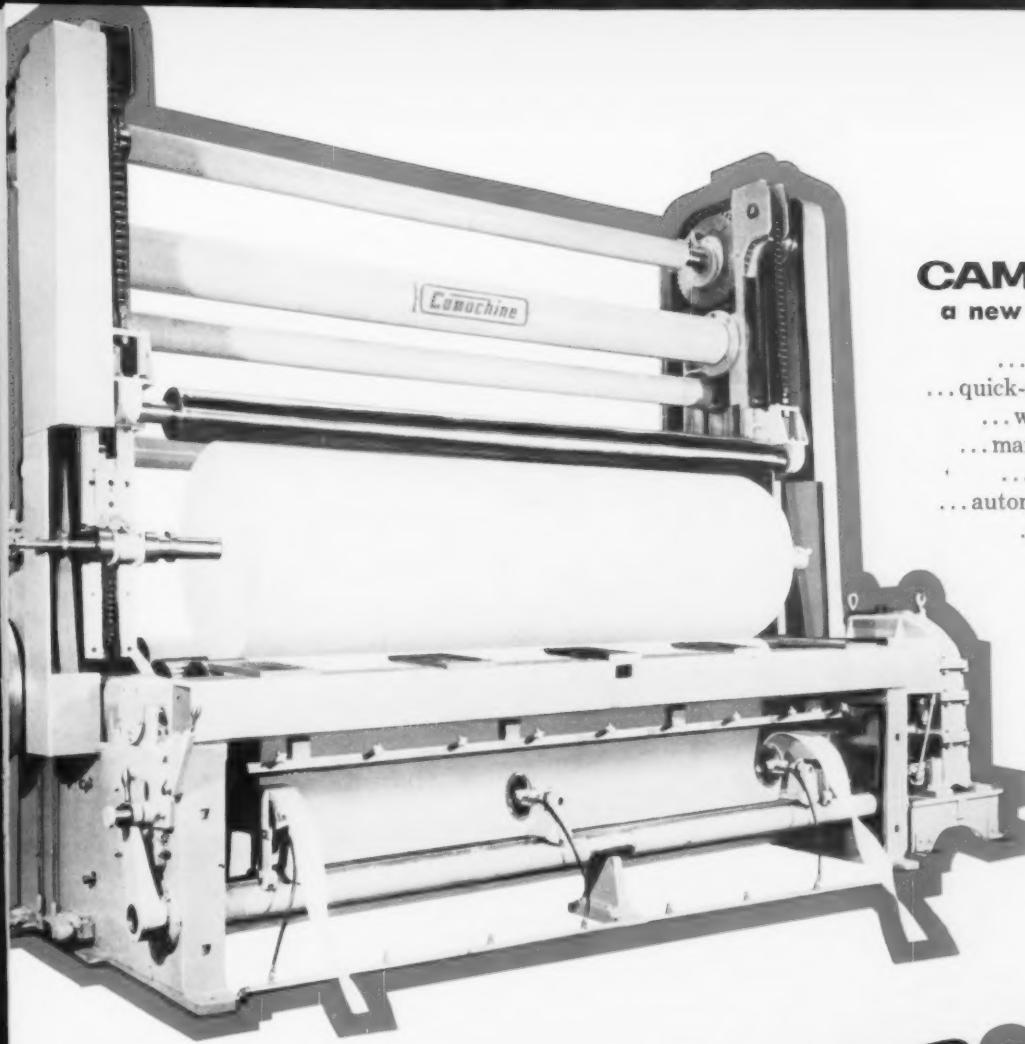
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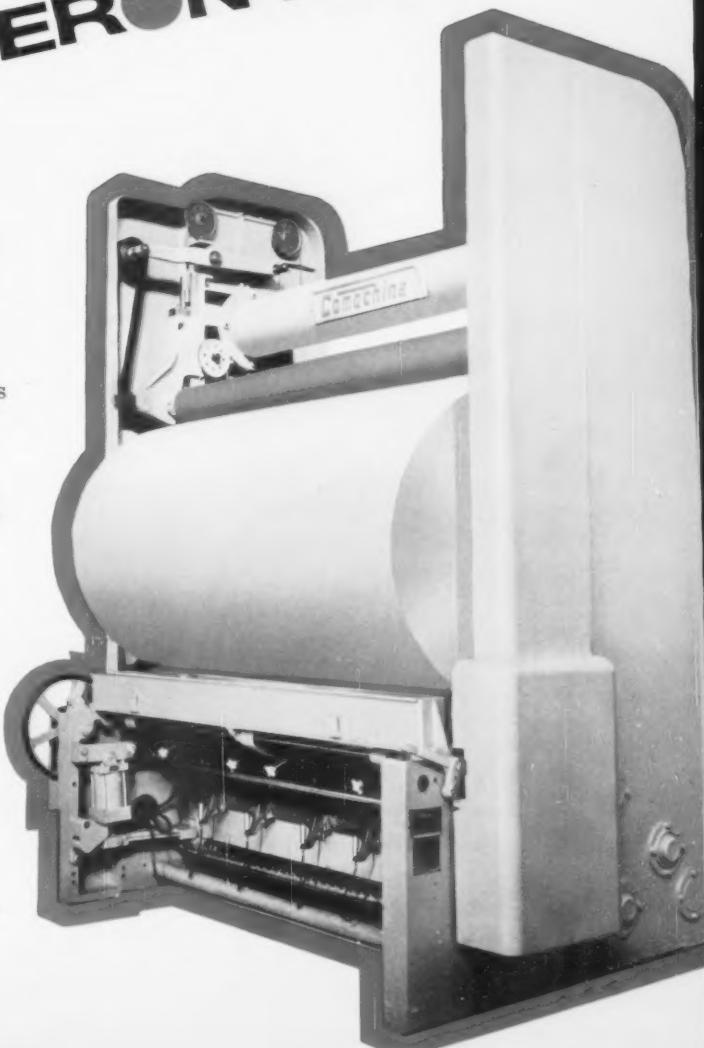
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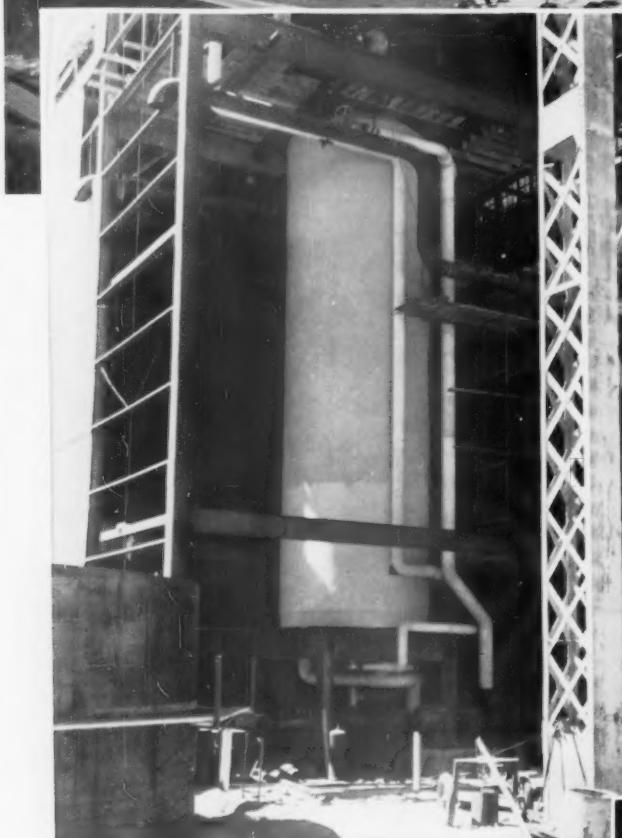
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A Digester — Recent Installation at the Lufkin, Texas Plant.

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MOLDERS AND FABRICATORS
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J. W. MILLER

Beloit Air-Cushioned Inlet In 1947 Beloit introduced the first air-cushioned inlet to the paper industry. Today, this device is running on practically all grades of paper, with machines so equipped operating at speeds averaging over two thousand feet per minute. For other details and advantages see following page.



BELOIT AIR-CUSHIONED INLET

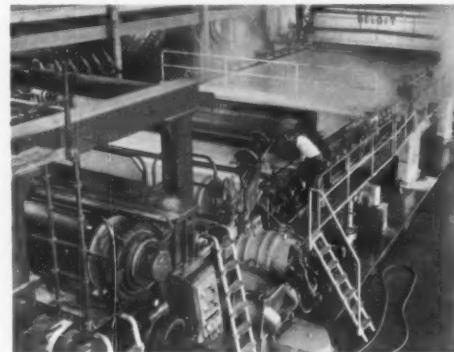
*Positive controllable flow and other
advantages for the modern paper mill*

Development of the Beloit air-cushioned inlet resulted from the demand for increased machine speeds. Main objective was to replace the gravity-type headbox which was increasing in height—in some cases reaching to the overhead mill girders. Because of the great volume of stock present in the gravity-type headbox, dead spots and flocculation were encountered in the flow passages.

The Beloit air-cushioned inlet is designed to maintain a positive controllable flow within the headbox. A predetermined stock level is maintained within the box by the use of air pressure or vacuum. The positioning of rectifier rolls directs a uniform flow of stock through the box. Beloit Iron Works patents cover all of the advanced design features involved.

Beloit air-cushioned inlets are meticulously manufactured. Surfaces coming in contact with the stock flow are clad with stainless steel. All welds are ground smooth and the inside of the box is completely protected during the manufacturing cycle, thus assuring that there will be no rough surfaces inside to cause stock accumulation.

Over the years the Beloit air-cushioned inlet has gained a reputation of keeping pace with the exacting demands of the paper industry.



- **Controlled Flow**—Predetermined stock level control by air pressure or vacuum; rectifier roll arrangements.
- **Slice Adjustment**—Major vertical adjustments by air motor control; minor vernier adjustments by hand.
- **Construction**—All surfaces coming in contact with stock flow clad with stainless steel.
- **Maintenance**—The very minimum.

your partner in papermaking

BELOIT

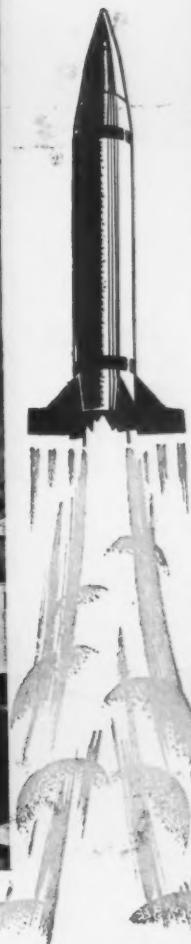
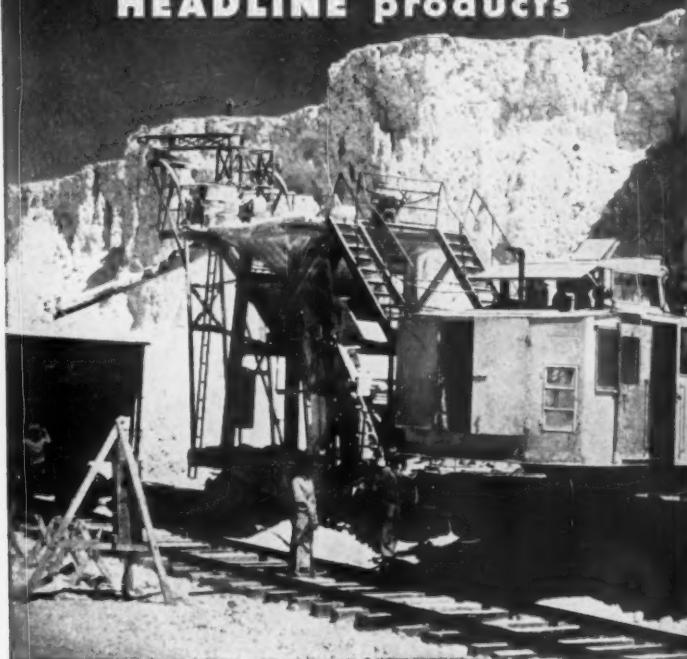
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helps to create
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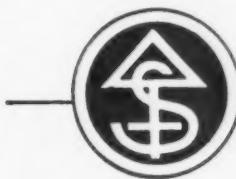
"Thiokol" synthetic rubber, is an organic polysulfide elastomer. One of its many uses is in solid propellents for long range and high altitude missiles. In liquid form, "Thiokol" synthetic rubber mixed with an oxidizer, is poured into specially designed combustion chambers of rockets. It helps to give stability to the fuel charge and resistance to shock. It promotes uniform burning. When the rocket motor is ignited the mixture burns with great intensity and generates large volumes of gas to propel the rocket.

Solid propellents made with "Thiokol" synthetic rubber have

proved their value in rockets over liquid propellents in many ways: they are less costly and easier to manufacture—simple and rugged construction makes handling and launching easier and safer—fuel tanks and complicated feed systems are eliminated.

"Thiokol" synthetic rubber is a product containing a high percentage of Sulphur—its name being derived from the Greek words for sulphur and glue. Here is another example of the continually broadening field in which Sulphur is an important and necessary element.

*A trade name of Thiokol Chemical Corporation.



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PRESERVATION OF
STARCHES AND PROTEINS

R. T. VANDERBILT CO. INC.

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The Big Thing is Capacity . . .

Paper Week delegates talked of many things but dominant theme was the challenge of expanded capacity

● "Over-capacity," "industrial statesmanship," "return to competitive normalcy"—these and many other financial-page words were still sparking much talk among pulp and paper men, long after the five days of long and short speeches on such subjects at the 1957 Paper Week in Manhattan.

A Pulp Hub for Paper . . .

Still remembered as one of the best and, certainly, one of the shortest speeches in the myriad of meetings in the Waldorf, Commodore and in-between hotels during late February was one by David L. Luke, Jr., president of APPA, before the Pulp Consumers. Of course, this grandson of the founder of West Virginia Pulp and Paper Co., re-elected to head APPA for another year, made a much longer speech at the Open Industry meeting, and he had to "rise to other occasions." But these are the rather unusual or unexpected words he spoke at the Consumers big event:

"Pulp is the hub of the wheel around which paper revolves. I assume there is no difference between production and consumption. I assume it all will be used."

His remarks had a noticeable salutary effect on producers and consumers, joined in the meeting, who knew full well that some poor "statesmanship," to a mild degree, had put the industry in a position where more capacity will be coming in this year than may be used.

For that matter, steel and other industries are in similar situations. Wise veteran pulp and paper leaders, buttonholed in the Waldorf corridors, said "there is no prosperity in shortages—we are going to be better off than we were," and that "the situation is not so serious that it can't be adjusted." It was pointed out that there have been years in the past when the industry did right well when operating at 90% or even 85% of capacity.

According to an accepted "official" forecast for the overall industry, 1957 woodpulp consumption in the U.S.A.—

of all pulp, market as well as integrated—is expected to rise 2½% over the record of 1956. To pulp buyers and sellers this was one of the really key points of all they heard during Paper Week.

There was also much talk of trying to get competitive groups to agree on a 6-day work week instead of a 7-day.

Market Pulp Outlook . . .

"Total reported new market pulp capacity being brought into production in North America during 1957 and 1958 is approximately one million tons," reported Karl A. Clauson, president of the Assn. of Wood Pulp Importers, at the annual luncheon of the U.S. Pulp Producers Assn., Inc.

"Nearly all of this tonnage is fully bleached and much of it is sulfate. In addition, there is also expansion of market pulp production in Europe, reliably reported to be about 200,000 tons in 1957 and another 200,000 tons in 1958, a total expansion of 1,400,000 tons.

"For the first time in a number of years, the long range prospects look substantially better than the short term picture. A long range factor which will have industry significance

is the serious discussion now taking place in Europe concerning an 'economic union' and an 'atomic energy pool.' Both of these concepts are designed to create and support a common market sufficiently large to enjoy the benefits of mass production. Ultimately, the collective prosperity of the cooperating countries will be much higher than they can attain individually. This in turn will result in a greater demand for many products, including both pulp and paper. (Ed's. Note: One U.S. observer differs, sees discrimination between U.S. pulp and paper products entering area of the "economic union" with a tariff imposed while "union" countries' products will move duty free.)

Hard Sell Will Help . . .

At the Sulphite Paper Mfrs. Assn., Inc.'s 25th anniversary luncheon, George Stewart of International Paper Co., Doc Southon of KVP Co., and Ed Kiefer of Port Huron Sulphite Paper Co. (Mr. Sulphite Assn.), three of the founders of that group, all talked of "cycles and waves" and agreed we may have seen another crest of the wave and will feel some effects of expansion. But they all agreed the

Association Leaders for 1957

Elected at Paper Week:

American Paper & Pulp Assn.—David L. Luke Jr., West Virginia Pulp and Paper Co.

Pulp Consumers—D. G. Driscoll, Sorg Paper Co.

Pulp Producers—James L. Ritchie
Salesmen—Glenn R. Spicer, Hammermill Paper Co.

Stream Improvement—George E. Dyke,
Continental Can Co.—Gair Div.

Sulphite Paper Mfrs.—Russell C. Flom,
Marathon Corp.

Writing Paper Mfrs.—F. N. Bridgman,
Strathmore Paper Co.

Newsprint Service Bureau—A. G.
Wakeman, Coosa River Newsprint Co.

Kraft Paper—Reginald L. Vayo, St.
Regis Paper Co.

Paper Napkins—R. W. Bertram, Marathon Corp.

Glassine & Greaseproof—Benton R.
Cancell, Rhinelander Paper Co.

Tissue—Norman Seagrave, Port Huron Sulphite Paper Co.

Blotting Paper—S. D. Fleet, Albemarle Paper Mfg. Co.

Coated & Processed Paper—Lawrence R. Clark, Hampden Glazed Paper & Card Co.

Specialty Paper and Board—Carlton A. Denny, St. Regis Paper Co.

Printing Paper—A. G. Sharp, Kimberly-Clark Corp.

TAPPI—Ward D. Harrison, Riegel Paper Corp.

American Pulpwood—Lucian A. Whittle, Brunswick Pulp & Paper Co.

necessity of getting out and selling harder will be beneficial.

Russell Flom, reelected chairman of the Sulphite group, said: "We can look to the future with optimism because of the growing population and increasing per capita use, but courage, intelligence and statesmanship will be needed in the near future, which will be a time of testing."

TAPPI meetings drew 2,500 registration and the general consensus was that this year they were heavily on the mechanical side, rather than chemical. There were no really startling new developments, as there have been in some past years at either New York or the Canadian meeting in Montreal. The corrosion committee is preparing to spread its studies into all phases of mill operation—not just kraft digesters as in the past.

Engineers will go West in '58 . . .

The engineers division, meeting in Cincinnati next October, made a decision definitely to go to Portland, Ore., July 27-29 (midsummertime) for their 1958 meeting—to the Multnomah Hotel. This will be their first meeting in the Far West.

Increased population, which has crossed the 170,000,000 mark in the U.S., is credited with 55% of the increase in per capita consumption from 331 to 435 lbs. per person since 1949. A good 45% came in because of new uses.

Freight rates, with a 22% increase facing the industry, was a moot question at Paper Week, but leaders were for going along with a moderate stand, as other industries were. The carriers were credited with treating the industry well.

Again this year with restrictive chemical additives bills before Congress which could hamstring normal research and development in this industry, pulp and paper leaders found that they were unable to count on any allies in the food industry as a whole. So pulp and paper leaders were virtually fighting the legislation alone.

Dominant Subject: Capacity . . .

What was the real significance of Paper Week? What one topic will dominate the industry's thinking in the months to come? Definitely, capacity.

There are some who call it overcapacity, some, expanded capacity and a few brave souls who say it may not be enough. The real problem, suggests one marketing executive, is underconsumption.

This may well be a new concept to alert the industry to "diamonds in its own back yard." It's another answer to those who say that U.S. per capita paper consumption has reached a sat-

uration level. They say it each year and while they were pontificating in 1956, the nation was busy consuming 15 lbs. per person more than 1955.

The other answer comes from Fred Edwards, advertising manager, American Cyanamid Co.

"Do we know just how big our present paper markets are?" he asked at the open meeting of the marketing and statistics committee of the APPA during Paper Week.

"We speak of per capita consumption, but that reveals little. Actually, who uses what kind of paper and in what quantities. Any family with a modern high standard of living that buys a full share of today's necessities and luxuries is using large quantities of paper. Consumption of paper by an individual in such a family may well have been well over 700 lbs. in 1956."

Paper, Paper Everywhere . . .

Mr. Edwards suggested that anyone who reads the daily and Sunday New York Times accounts for between 300 and 450 lbs. of paper. If he reads a second paper—and many do—his newsprint consumption would almost double.

Add another 300 lbs. for magazines such as *Life*, *Reader's Digest*, *Saturday Evening Post* and for business publications such as *Business Week* and *Industrial Marketing* and trade publications such as *PULP & PAPER*, he stated.

Now add to this comic books, pocket books, . . . other special publications of interest to your children—and you are well over 1200 lbs. . . . Book of the Month Club selections, business volumes, cook books, textbooks that your children use in school, 50 to 100 lbs. of direct mail that you receive and the Christmas cards, too.

Mr. Edwards then presented a look at the other side of the picture—the family leading a rural life in one of the economically lesser advanced areas.

"The capacity of humans to consume is relatively equal, given equality in social and economic conditions," Mr. Edwards quoted from his company's Daily Paper. "If you accept this—you must believe that our present markets will expand enormously as our standard of living rises."

"Total Marketing" . . .

There was one proponent of the "hard-sell" who offered a remedy to the industry. G. J. Ticoulat, senior vice president, Crown Zellerbach Corp., bluntly told the industry it has been preoccupied for too long a time with the production end of business. He urged the industry to concentrate for a change on a new concept of total marketing.

To those who continually look back at the Terrible Thirties and the disastrous Twenties and point to the similarity of conditions, Mr. Ticoulat insisted, "Nothing is ever quite the same as it was 20 or 30 years ago—even in the pulp and paper industry."

"It is in the area of marketing that things are changing. I think there is increasing recognition that the future of our industry is closely bound up, not so much with the way paper will be produced as with the way paper and paper products will be marketed.

"Emphasis within the industry will have to be changed from production to marketing, if we are to utilize fully the capacity that will be available and if the industry is to continue to grow and develop along economic and durable lines.

"Marketing, or what I prefer to call total marketing, is the key to full utilization of capacity. Total marketing is both the challenge and the opportunity before us.

"By total marketing, I mean this: first, the marshalling of detailed factual information on all existing and potential markets for paper and paper products down to the ultimate consumer in each market; second, long and short range plans of operation for the development of those markets; third, a continuing sales and marketing program backed by the organization, the facilities and the resources necessary to do the job.

. . . Involves Total Distribution . . .

"Total marketing involves much more concern with the ultimate consumer. For marketing cannot stop with the distributor or converter who buys our paper for processing and resale. We must also have a clear picture of our customer's market and an intimate knowledge of the ultimate consumer who buys the final product



And yet more shoptalk

Potential applications for R. T. Vanderbilt products (wax emulsions, defoamers, surface resins) are discussed by (l to r) CHARLES H. CHAMPION, mgr., paper dept., DON HUGHES, Midwest rep., RAY E. HARTER, asst. mgr., paper dept.

at the other end of the distributor pipeline.

"Total marketing encompasses the entire distribution system.

"Population growth is very much in our favor, as is per capita consumption, and our industry may well have to expand by as much as 80% between now and 1975 to supply a population which by then will probably number some 215 to 220 million people. (Ed's. Note: This would mean the industry would have to produce 60 million tons by 1975.)

"There is also the prospect of an increased market for American paper products abroad which has been barely scratched because our preoccupation with the domestic scene has inhibited a more vigorous penetration of foreign markets.

"Total marketing can offer creative and positive solutions to our problems and it's a far better course for all of us than reversion to the negative and self-defeating approach of the past."

Marketing Studies . . .

What could the industry expect from marketing studies? Answered Mr. Edwards, "Future paper markets will fall into three categories:

"1—Completely new uses for paper in areas where paper has perhaps not even been thought of, but where human needs and hard economic facts seem to make a large future market possible (paperboard housing, paper clothes, paper bedsheets).

"2—Markets where paper is now used on a limited scale, but where the potential is large (paper for highway construction, paper dishes, paper with flavors, and paper in combination with other materials such as plastics and spun glass).

"3—New markets resulting from substantial expansion of present paper use, based on selling increased tonnage as a result of rising standards of living."

Potentials in South Africa . . .

But Mr. Edwards and Mr. Tieoulat were not alone in their thinking. There were others.

At the ninth annual meeting of APPA's export committee, W. Clifford Shields, vice president of Farrell Lines, considered the export potentials for the pulp and paper industry's products in South Africa.

"Considering water limitations and the relatively limited areas available for plantations, I am inclined to think that there is a foreseeable limit to expansion of the pulp, paper and board industry in South Africa.

"South Africa is growing, with a corresponding increase in the use of paper. But a land with no natural forests and limited afforestation areas—



At coffee-klatsch time, shoptalk on coating trends

Visitors to Glidden suite discuss coatings: (l to r) WALTER BAIN and JOE VOIT, Glidden Co., JIM H. WING, Continental Can-Gair Div., BOB G. VAETH, Gair, RAY OLSON, Glidden.



After the day was supposedly over, another huddle

Subject of discussion is Patton horizontal size press by (l to r) WAYNE CRANNELL, sales mgr., GEORGE S. HERBERT, v.p., mgr. paper div., "BUTCH" BUTTERFIELD, sales engr., Patton Mfg. Co., ELMER SMITH, supt., Union Paper Mills, and CHARLES E. HILL, chief engr., Patton.

with limited water for use in papermaking and for effluent disposal—and with many demands besides the paper industry on its plantation products, I firmly believe that the country, growing as it is, cannot become self-sufficient and therefore will have to import much of its requirements.

... And in South America . . .

How about potentials in South America? Probably one of the keenest observers of the South American market is W. R. Grace & Co. Based on its new continuous flow Peadeo pulping process, Grace is plunking down \$50 million for papermaking from bagasse in Puerto Rico, Cuba, Colombia and other Latin American countries.

Immediate and long term growth possibilities for U.S. pulp and paper products in a select list of some 20 countries represents a potential \$200 million market, says Eric G. Lagerloef, secretary of APPA's export com-

mittee, in a new market report recently issued.

Candid Comments . . .

Returning from a six-week business trip in Europe, one sales manager for an equipment company was amazed at the tremendous change in the industry in North America in that time. "You can stay away from most European mills for a long time and not see any change except in some of the more progressive mills," he said, adding, "All you have to do is just step away from the North American picture for a short time and when you come back you hardly recognize it."

A significant trend in the industry's thinking was reported by one machine builder this way: "More machine rebuilds are going in than new machines."

One paper mill technical director (a graduate chemist), made this surprising comment when asked what he

thought of one of the papers delivered at the TAPPI sessions: "Too technical for me. This fellow missed a good bet. Speeches should be written to be read; most of them are written to be printed and thus reflect a lack of sparkle. They don't have any life to them. If only these fellows would get up there and talk the way they do in regular conversation. They could say, here was the problem and here's what we did. By burying the substance in heavy wordage they kill it."

Natwicks Enjoy Reunion; See Cousin Star on Broadway

A famous papermaking family—the Natwicks from the town that is now Wisconsin Rapids, Wis.—had a reunion of four brothers at Paper Week in New York. At the same time, their distinguished cousin, Mildred Natwick, was starring in a leading role in the Broadway hit, "Waltz of the Toreadors," so they were all stage door "johnnies" for a night, too. The four brothers who got together:

Albert G. (Buff) Natwick, vice president and resident manager, East Texas Pulp & Paper Co.

John "Rux" Natwick, who is in charge of paper industry sales for Jackson & Church Co.

Don Natwick, of D. L. Natwick Co., list brokers, New York.

Grim Natwick, a maker of animated cartoons for UPA Pictures, and formerly with Walt Disney.

Don and Grim formerly worked in the paper mills, as did another brother, F. J., now retired on a California ranch. A sixth brother, Vernon Natwick, is kraft mill tour foreman at Crown Z's Camas, Wash., mill.

The father, who died at 93 three years ago, J. W. Natwick, was many

years supt. of John Edwards Lumber Co., forerunner of Nekoosa-Edwards Paper Co. where most of his sons worked.

John, son of the rancher Natwick, is supt. at Consolidated Water Power & Paper Co., Ben, son of Buff, is Pacific Coast rep. for Appleton Wire Works. H. E. Karberg, whose wife is a sister of Buff Natwick's wife, Cecile, is manager of Alliance Paper Mills, Merriton, Ont.

L. K. LARSON, mgr. of sales, pulp division, Weyerhaeuser Timber Co. " . . . For the pros and cons of integration, some fair questions."



Army Psychiatrist Makes Deep Imprint on PAPER WEEK

Several hundred top leaders of the pulp and paper industry came away from the annual Pulp Consumers luncheon at Paper Week with a new and deep understanding and respect for young men in the services who are captured and subject to Communist "brain-washing."

"I can excuse a young man for almost anything after that," exclaimed one company president. Executive Secretary Reed Porter of the Association of Pulp Consumers lined up for the luncheon the most sensational speaker of the week—young Maj. William E. Mayer. While he spoke on his own authority as an army psychiatrist, who was assigned to study the problem of Communist indoctrinated soldiers in Korea, it seemed quite clear that the U.S. army wanted very much to get across a most important message to industry leaders—many of whose employes and other young men of their mill towns may some day be subjected to Communist "brain-washing"—perhaps the most serious weapon on the enemy's side.

On another subject, Maj. Mayer had this comment to make: "The army no longer runs on its stomach—but on bales and bales of paper."

Market Pulp Capacity as Seen by a Pulp Producer

From Paper Week talk by L. K. Larson

• It is claimed that it no longer makes sense to dry slush pulp on one Fourdrinier and then reconvert it to slush for redrying on another Fourdrinier, that this is tantamount to making paper twice. How can any converter of market pulp hope to come out whole when his twice-made paper has to compete with the once-made mass-produced paper of efficient integrated mills?

These are fair questions. There is no market pulp producer in the U. S. who has not considered the pros and cons of integration.

The trend has been the other way. Despite substantial forward integration by pulp producers, by merger, etc., U. S. production of market pulp has increased 100% during the past decade. Total North American production has increased by 88%. Why?

The answer is that market pulp serves functions vital to the economic welfare of other segments of the industry: 1. It supplies raw material for many, and often relatively small, non-integrated producers of paper and paperboard. 2. It supplements supply available to integrated and partially integrated producers. 3. It provides raw material for such chemical products as rayon, cellophane, plastics and explosives.

Non-Integrated Producers . . .

These supply about 25% of paper and paperboard produced in the U. S., and depend entirely on purchased fiber, principally waste paper, market woodpulp, rags, and straw. In many cases, fibers other than woodpulp would not be used were it not that woodpulp is available to complement, enrich, or bring down the cost of the overall furnish.

In production and sale of specialties, non-integrated producers have a flexibility that integrated producers in most instances would find difficult to match.

But non-integrated mill are not con-



Famous Paper Family Get-Together

The Natwicks (l to r): JOHN "RUX," in charge of paper sales for Jackson & Church Co.; DON, of D. L. Natwick Co., list brokers; ALBERT G. (BUFF), Vice Pres. and Resident Mgr., East Texas P&P Co; and GRIM NATWICK, UPA Pictures.

fined to specialties. Much of the pulp they buy goes into products which compete directly or indirectly with integrated mills. Here, everything else being equal, the economics of production favor the integrated mill. But everything else is seldom exactly equal. The non-integrated producer often enjoys offsetting advantages such as lower distribution costs and more flexible service.

The market pulp producer is in effect an integral part of the non-integrated mills. It is his job to keep pulp available in the volume, quality, and variety they need, on competitive terms.

Integrated and Partially Integrated Mills . . .

Integrated and partially integrated mills accounted last year for 35% of total U. S. consumption of market woodpulp.

These mills purchase market woodpulp: 1. To procure grades needed to complement their own pulp production and round out their total furnish requirement. 2. To procure supplementary tonnage of a grade they produce, but in volume inadequate for their requirements.

Of these two demand factors, the second is more volatile. In a weak market, integrated mills continue to buy pulp tonnages to complement their fiber furnish; their purchase of such grades will rise and fall in proportion to their own production.

Supplementary tonnages produced by integrated mills to augment their production of a given grade, however, are more susceptible to economic change; integrated mills will tend to maintain their own production in a declining economy and modify or cancel pulp purchase contracts.

This is one of the calculated risks of the market pulp business. In recent years it is a risk that has paid off: the purchase of market pulp by integrated and partially integrated paper producers has grown faster than any other segment of domestic market pulp demand. It has increased by almost 40% since 1951.

Market Pulp a Balance Wheel . . .

At no time has market pulp fulfilled its function as a balance wheel more effectively than during the past five years of relatively full operation. Demands for end products of paper and paperboard mills, during such a period, increase steadily and progressively, not by leaps and bounds. As a matter of practical necessity, installation of new integrated pulp facilities to meet these increased end-product demands must be by leaps and bounds.

The minimum economic unit for a

new chemical pulp mill is 100,000 tons a year. Obviously, if apparent potential demand for the end-products of an integrated mill has increased by only 25,000 tons, that increased demand would not justify construction of a 100,000 ton pulp mill. When end-product demand rises to 75,000 tons, however, construction might be justified.

Nothing can prove more disturbing to the overall fiber economy than construction of a 100,000 ton pulp mill to feed a 25,000 ton increase. The alternatives are (1) to leave idle three-fourths of the capacity of the new pulp mill, or (2) to operate the new pulp mill fully and endeavor to sell three-fourths of the tonnage in the open market.

The first alternative would be costly. The second, if it were part of a general pattern, could be even more costly; its effect could disrupt the balance of the market pulp economy. The same sort of disruption can occur if, during periods of weakening paper demand, integrated paper producers dry pulp on their paper machines for sale. Any temporary advantage that might accrue would certainly be more than offset by the delay in recovery of end-product markets.

The role of market woodpulp in exports is becoming increasingly important to North American market pulp producers, who recognize their opportunities and responsibilities in the expanding world markets.

None of these outlets for market pulp is isolated. Each merges into the other, producing a complex and constantly changing whole. This greatly complicates the task of judging the market and adjusting to it.

Fortunately, as David Luke, president of APPA, says, our lines of communication and other sources of information are better today than they ever were during similar periods in the past. To be tested under fire, however, is the flexibility of managerial policy—the willingness of individual company managements to accept, evaluate, and re-evaluate new facts; to arrive at sound convictions; and, to pattern individual course of action to those convictions.

Not Conflict, but Complement . . .

It is important that, functionally, various segments of the fiber economy are not actually in basic conflict with each other, though they may possess power to injure each other. Rather, in basic function, they are designed to complement. Properly knit, in good times or bad, they constitute a sound and logical whole; one is the warp, and the other the woof of our industrial fabric.

It doesn't take much friction to ignite the spark of conflict and to transform a well-ordered industrial economy into a conflagration. And fires in the channels of distribution, can be far more destructive of economic values than forest fires. The only way to prevent conflagration is for each of us to douse his own sparks before they ignite and spread.



SAMUEL R. SUTPHIN, president, Assn. of Pulp Consumers, Inc. " . . . but little attention has been paid to demand."

Market Pulp Capacity as Seen by a Pulp Consumer

From *Paper Week* talk by S. R. Sutphin

• The preliminary consumption figure for last year of market woodpulp used in paper and board mills in the United States was nearly 2,980,000 tons, about 160,000 tons higher than 1955 and about 75,000 tons above the previous record made in 1950. To repeat, more paper-grade market pulp was consumed in 1956 than any other previous year in the history of the industry. This is especially significant because (1) it was done without the stimulus of a war economy as occurred during the previous high year of 1950, and (2) numerous companies within the pulp consuming group were operating below capacity for much of last year. This leads us to the belief that even higher consumption demands will be made.

Survey Drew Wide Response . . .

This belief was given substantial support by a survey conducted by the Assn. of Pulp Consumers.

If the result of this survey is projected to 100% of the industry, the capacity to consume market pulp, by the end of 1957, will have been increased by over 400,000 tons above the actual 1955 consumption. By grade, this survey indicated that about 68% (275,000 tons) of this increase would be in the bleached grades, divided almost equally between bleached sulfite and bleached sulfates. The indicated growth in usage of unbleached sulfite was very small.

Considerable support was given to the accuracy of this survey by actual

1956 results. Despite the spotty year by some segments of the industry, consumption still exceeded 1955 by 160,000 tons. And we must also remember that many expansion projects by consuming mills were completed late in the year.

I should like to emphasize that I am talking about capacity to consume, and that this should not be construed as a forecast. But in the attempt to draw up the balance sheet of supply and demand, we must of necessity confine ourselves to practical capacity figures. Whether you accept our survey figure or not, I think all must admit that there exists an ability to consume larger amounts of market pulp if presented with a favorable economic climate.

How about Demand . . .

In the face of this higher potential demand, we consumers are pleased to see additional sources of paper-grade market pulp being constructed. We all have heard and read much about possible over-production of market pulp. This is a subject of serious concern to the consumers as well as the producers. But I suggest that far too little attention has been paid to the demand side when discussing this subject.

Analysis of the sources of our market pulp supply in 1956 reveal us to be far too dependent upon factors outside of our own economic sphere to be reassuring. We were able to avoid pulp shortages last year only by the grace of slack business in the rayon industry and by a leveling off in the European paper and board industry. Both of these developments must be considered temporary.

We were the principal beneficiaries

last year of a decline in Canadian and U.S. pulp exports of about 150,000 tons; we imported another 375,000 tons of European pulp last year; and approximately 300,000 tons of paper-grade pulp was supplied from dissolving mills over and above their announced paper-grade contractual tonnage.

I should like to emphasize here, that while we regard the contractual tonnage from these mills as part of our regular and dependable supply, we do question the permanence, however, of that portion of paper-grade pulp which finds its way into our market in periods of slack rayon demand. May I also add that we were most thankful that this pulp was available to us during the past two years.

A Close Balance . . .

But to return to the demand and supply balance sheet, the sum total of the above irregular sources of supply, plus the indicated new additional consuming capacity, comes very close to balancing the new paper-grade market pulp tonnage coming into production in the next 12 months. Furthermore, this does not include some 350,000 tons from Europe which might be denied us in times of war.

To sum up the arguments for the demand: if the market pulp consuming mills in the U. S. can run full, and if Europe and the rayon industry return to their normal growth trends, we once again could be in a tight supply position. Perhaps neither the consuming nor producing mills will operate near capacity in 1957 or 1958, I don't know. However, given the proper economic climate, we think we will more than need all the new pulp capacity which you gentlemen are building.



New Hand at APPA Helm

E. W. "TED" TINKER (left), retiring exec. secy., American Paper & Pulp Assn., turns over his job to ROBERT E. O'CONNOR.

For APPA, a New Exec. Secretary

"A brilliant, conscientious young man serving his country while serving his industry," is how one APPA director described executive secretary-elect Robert E. O'Connor.

Succeeding E. W. "Ted" Tinker, executive secretary for some 18 years, young (38) Mr. O'Connor has been with APPA more than nine years. He joined the industrial relations staff in 1948, was secretary of that committee for four years and upon retirement of Glen Amos, stepped up to assistant executive secretary.

His experience with APPA includes serving as secretary of several committees including finance, power and water resources and public affairs.

Tall, slim Mr. O'Connor has been active in the work of the Forest Industries Council and is now a member of its executive committee. He has also been APPA's representative to the National Industrial Council of NAM.

Mr. O'Connor has his bachelor's degree from Queens College, New York City, and his I.I.B. from the School of Law of Columbia U. He is a member of the New York State Bar. In school he received varsity letters for baseball and basketball and was active in student government affairs.

He was awarded a teaching fellowship to Louisiana State U., but World War II prevented acceptance. He enlisted in the U. S. Coast Guard, was honorably discharged as a lieutenant j. g.

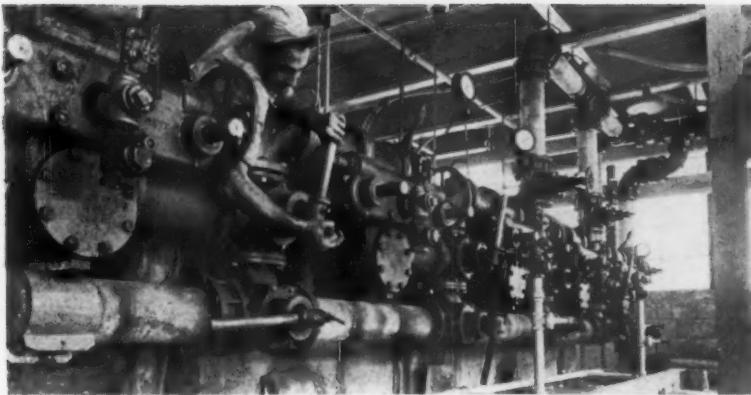
The new secretary has travelled extensively in various regions of North America on industry affairs. He and his wife, the former Marcella Hogan, and their four children live in Greenwich, Conn.

His faithful train companion is a thick briefcase crammed with business correspondence. In an exclusive interview with PULP & PAPER, Mr. O'Connor said that an important "assist" in helping him keep on top of significant industry developments are the industry publications.



From foreign fields, visitors to Paper-Week in New York

(At left) PETER J. ABEL, sales eng., Stickle Steam Specialties Co., with KIM SEUNGGYU, mgr. and eng. for Korean government printing company which plans a paper mill to make cigaret and banknote paper from cotton rags. Paper mill equipment is being supplied by Sandy Hill; drainage controls by Stickle. (At right, l to r) ANNA ROSA CORALLO, chemist, Utile Cremona Societa, HAIGH M. REINIGER, v.p. i/c sales, Emerson-Bolton and PIAZZA RENATO, engineer, visitors from Italy touring semichemical mills in U.S. "NSSC is a big revolution in pulping because it takes the place of groundwood and sulfite pulp in several applications," they told P&P.



Serving Special Needs . . .

Israeli worker operates Modern Stock-Maker at American Israeli Paper Mills, Ltd.

Expansion in Israel

American Israeli Paper Mills, Ltd., at Hadera, Israel, supplies almost two-thirds of Israel's paper consumption (see PULP & PAPER 1956 World Review issue). Two problems facing this firm when they began operation about three years ago were complete lack of trained personnel and the demand for a variety of papers.

Despite the crisis in the Mideast and continuing threat of war involving Israel, the Israeli Paper Mills has launched an expansion program which calls for an additional paper machine, bringing production up to 30,000 short tons, from 20,000.

Since two more Morden Stock-Makers (making a total of seven) and a Morden Slush-Maker were installed in 1955, the plant has reached a capacity of 75 tons for multiwall kraft. The Slush-Maker also provides preliminary low power cost refining by action of the attrition ring. This breaks kraft fiber bodies down so that when furnish goes through the first Stock-Maker, this unit is doing more refining, rather than further breaking up of fiber bundles.

Parsons & Whittemore, Inc., consulting engineering firm, is making a full-scale survey of Israel's wood and vegetable resources for the company. The primary potential sources are eucalyptus, straw, corn stalks, juncus, and cotton stalks.

Summer Start-Up for Mill

Installation of equipment at the new paperboard mill of Container Corp. of America in Santa Clara, Calif., is expected to be completed by late spring to permit operations to begin in June or July, according to Thomas F. Cass, vice president. The new plant will use purchased wood-pulp and waste paper to produce all grades of board from cylinder liner to high quality folding types.

Black-Clawson Co. is furnishing the 146-in. seven-cylinder board machine and Shartle stock preparation equipment. The paper machine is designed to operate at a maximum speed of 600 fpm at a capacity of 150 tons daily. It uses 42-in. diameter molds and is equipped with a suction return drum press, four primary presses, and three main presses. It has a double deck section of 61 48-in. diameter dryers, followed by two stacks of calenders, one Autoflyte reel, a duplex cutter with slitter, and a two-drum winder.

The stock preparation system consists of a four stock system for filler, top liner, underliner, and bottom liner. It will have one continuous Hydrapulper, two batch Hydrapulpers, six Shartle jordans and a Sveen Pedersen saveall system.

B.C. Mill Plans Fall Startup

More than 1300 men are working on B.C. Forest Products Ltd. \$38,000,000 bleached sulfate pulp mill

under construction at Crofton, on the east coast of Vancouver Island, B.C., and it's expected that the project will be completed next fall.

Commonwealth Construction Co. of Vancouver has the main contract. Howard Simons, Ltd., consulting engineers, designed the mill. Dominion Bridge Co. is supplying and erecting the steel.

A feature of the overall project is the laying of a 10-mile pipeline from the Cowichan River to the mill. The pipeline consists of 1700 sections of steel pipe reinforced inside and out with $\frac{1}{4}$ in. concrete to reduce friction and expedite the flow while eliminating danger of chemical reaction. About 50,000,000 gal. of water will flow through the pipe every 24 hours.

American Pipe & Construction Co., Los Angeles and Portland, supplied the pipe. A pumping station on the bank of Cowichan River, 1½ miles southwest of Duncan, equipped with Byron Jackson units, will pump water into the intake of the river and over the bluff to a surge or storage tank.

Much of the raw material required for the mill will be chips produced at B.C. Forest Products sawmills and plywood plants at Victoria, Vancouver, Youbou and Hammond. Other sources will be timber harvested by the company, as well as chips, logs and pulpwood from non-company sources.

Beside the pulp mill the company's operations include 10 logging divisions, four sawmills, a shingle mill and shake plant, a plywood mill, veneer mill, Presto-log plant and chipping facilities at all mills.

John Grieve, with 20 years' experience in the industry, is mill manager, and Donald Baker, long associated with various Pacific coast mills, is assistant manager and technical supervisor.



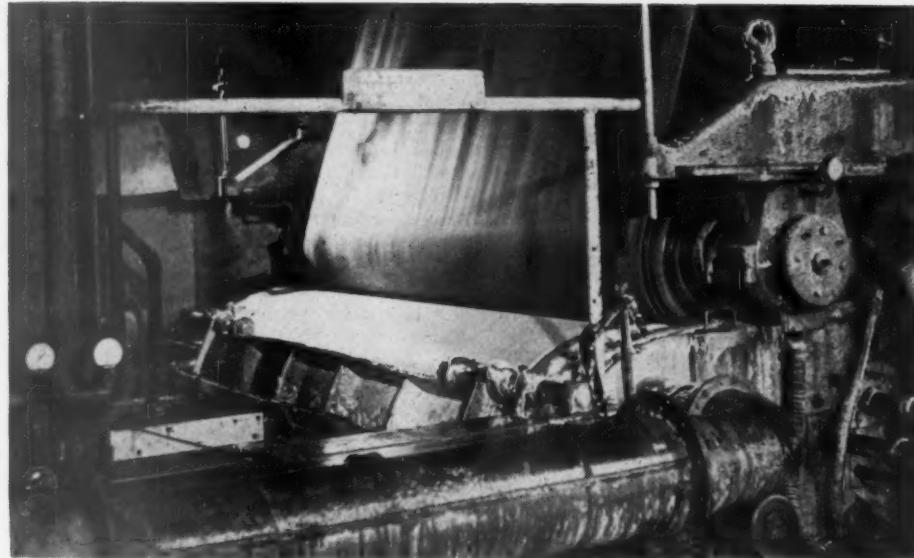
Kiln for Burning Lime Mud at New Crofton Mill

Taylor lime kiln section for pulp mill is 10 ft. diam., 250 ft. long. In the kiln, lime mud is burned to active lime which is used to reactivate cooking liquor recovered from the pulp-making process.



**Sam Stevens and his Former
at Erving**

"... the big thing was to get water
to follow a curve . . ."



Former Operating at about 1,000 fpm

Pipes in foreground provide suction connections to maintain vacuum in the forming mould and for the suction pick-up roll over cylinder which removes sheet from wire.

PULP & PAPER SPECIAL . . . FIRST STORY OF THE STEVENS FORMER

A Major Change in Papermaking

**An idea which persisted with Sam Stevens finally flowers at
Erving Mills, combining best of Fourdrinier and cylinder**

—Erving, Mass.
• Along State Highway 2 in Massachusetts, the winding road brushes so closely to a small paper mill here at

Erving that the motorist can almost reach out and touch it. Townfolk call it their "mill by the side of the road." Few realize that within the confines

of a 40-ton-a-day napkin specialty mill of Erving Paper Mills a change in papermaking practice has been initiated and carried to successful con-

clusion, and that the effects of this change may eventually be felt wherever paper is made.

The story of Samuel S. Stevens and his Stevens Former is the story of an idea that persisted in Mr. Stevens' mind for a long period, waiting for the right break. The Stevens Former bears certain physical resemblances to a single cylinder vat of a cylinder type paper machine, and, in a broad sense, the development can be said to combine some of the favorable characteristics of both the cylinder and the Fourdrinier machine. Since 1870, many U.S. patents have been granted to those who have tried to accomplish this; some with partial success, others with none.

Recently, the advertising pages of magazines such as *Time*, *Newsweek* and *PULP & PAPER* carried the intriguing story of "The Little Machine That Dared to Run Away From Home." Papermakers could only guess at what was so unusual about this machine. Traditionally, tissues are made on a Yankee Fourdrinier. In the advertisements, the Fourdrinier appeared to be missing. A further guess as to the importance of the little machine hinged on the importance given it by Crown Zellerbach which said that it planned on installing more machines in key cities.

Answer to a Secret . . .

All the time the answer was in a mill clear across the continent in Massachusetts. Here, at Erving, is the birthplace of "The Little Machine That Dared to Run Away." Until now, it has been a well-kept secret.

In fact, so well kept, that this amusing incident took place recently

Why This Story? A Link Across Continent

Crown Zellerbach papermakers and engineers are very free to express their debt to Sam Stevens and the Stevens Former. Their "Little Machine that Dared to Run Away from Home" is a CZ version of the Stevens-Beloit development. For this reason, *PULP & PAPER* decided to send its Maury Castagne to Erving, Mass., for this story of the original specimen—the "parent" machine for all the "Little Machines"—present and future.

First news reports of CZ's "Little Machine" appeared in the Sept. 1956 issue of *PULP & PAPER*. This is the 91-in. "package unit" Beloit single cylinder-type tissue machine, with Reliance Electric & Engineering drive, which has created quite a bit of a stir in the Crown Zellerbach Los Angeles mill.

It is CZ's version of the Stevens Former, plus an ingenious assembly line system for making bathroom tissue and napkins right off the end of the machine. Pulp is pressure-sprayed on a cylinder machine, followed by drum dryers, creping and rewinding, and exceptionally soft tissue is fed direct into automatic converting equipment.

The nickname of the CZ version—the angle about "running away from home"—is inspired by the belief that this machine is ideal for installations far away from sources of pulp and timber, but in the heart of paper markets—making household products "right near the housewife's doorstep."

Already, CZ has announced plans for four more "Little Machines" and there may be more. One more goes in at Los Angeles and three at the new Antioch, Calif., papermaking and converting center, making toweling and tissue.

at Erving, Sam Stevens, general manager of manufacturing at Erving, was approached by one of his men who showed him the advertisement of the "Little Machine, etc." and said, "Sam, this looks like a good thing. Maybe we ought to look into buying one of these."

Mr. Stevens smiled. He could have said plenty, but he had been pledged to secrecy. His time had not yet come. But it has now.

How Sam Stevens Got His Idea . . .

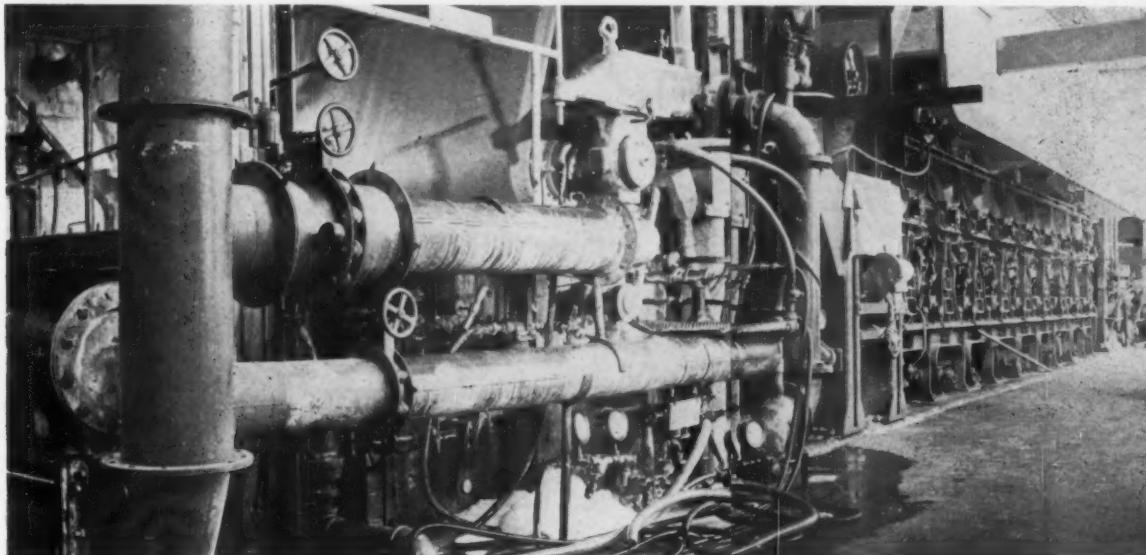
Samuel S. Stevens was practically born with paper stock coursing through his veins. His father, Capt. Frank L. Stevens, was president of Stevens & Thompson Paper Co.,

Greenwich, N.Y. Young Stevens grew up in the paper industry.

During the summer intervals from Columbia U. where he was studying mechanical engineering, young Stevens worked in the experimental laboratory at his father's mill.

Here, probably, was where he got his first gleam of an idea for his Former. The lab boasted of an experimental Harper Fourdrinier with a cylinder on the back end. Mr. Stevens worked at S&T from 1922 to 1934, when he joined the BFD division of Diamond Match Co. at Plattsburgh, N.Y.

Over the years, the idea of the Former became more persistent. At meetings and conventions, Mr.



Creping Press is Between Former and Dryers

Stevens would talk about his idea to paper mill men. Most of them laughed and told him he was crazy. There were two notable exceptions: Morris Hause, chairman of the board, Erving Paper Mills, and the Beloit Iron Works people.

The First Test . . .

In 1949, Mr. Stevens joined Erving. One day, Morris Hause asked him, "Sam, whatever happened to that idea you had for improving the Fourdrinier?" "Nothing. It's still right here in my head. No one wants to give it a try. I haven't even been able to try it out on an experimental machine."

"Why not try it out on old No. 4?" offered Mr. Hause. He offered to take all the risks and the two men agreed to be equal partners in whatever success they had. Patent protection for the new ideas was arranged for.

Old No. 4, installed around 1917, was the first machine in the mill. It has a 90-in. wire, and boasts of one of the first sectional drives ever made by General Electric (1922).

Plans were drawn up; No. 4 was stripped as orders for the necessary parts went out to local fabricators. After alterations, a machinetender pressed the stock starter button and everyone crossed his fingers. "Surprisingly," says Mr. Stevens, "it worked right off the bat."

How it Works . . .

A Beloit pressure distributor is the first element of the Former. The mixed flow of stock and white water passes through this distributor to the throat, where the velocity of the flow is brought to the optimum level for the type of sheet being run. From this point the contact is made with the forming surface of a special cylinder mould and sheet formation is carried through to completion in a comparatively short space. An important feature here is that this forming space is between the forming wire and a curved top surface or roof, carried in mounting parts providing for ready adjustment of the forming space.

As already indicated, the forming wire in the Stevens Former is fastened to and carried by a cylinder mould of special design. An enclosure, or vat, carries the mould and provides sealing elements that permit carrying vacuum in the entire mould and vat assembly. Contrary to ordinary cylinder machine practice, no water level is maintained within the mould, but the white water, after passing through the forming wire, is promptly carried away.

Key to Success . . .

The big problem, says Mr. Stevens, is to make water do something it doesn't want to do—follow a curve. He explains that, when this has been accomplished, formation can be readily controlled. The flow through the forming wire is maintained by the differential in pressure from that maintained in forming space to the vacuum inside the mould. Variation in basis weight, consistency and free ness encountered in formation of the different papers handled are provided for in the Former adjustments and the vacuum control.

Most sheets are completely formed by the time they pass out of the enclosed part of the forming area, but vacuum is maintained on the wire for a space thereafter to complete drainage from heavier sheets and to further dewater before the sheet is removed from the wire. In the Stevens Former the sheet is automatically removed from the wire by a pick-up felt. Either a plain pick-up roll or coupler or a suction pick-up can be used at this point, depending upon machine speed and other factors.

The experience at Erving with the Stevens Former covers commercial operation in the basis weight range from 10 to 32 lbs., with short runs on a somewhat wider range. Speeds in excess of 1000 ft. per min. are regular practice on the lighter sheets, with the existing dryer capacity limiting speed on heavier sheets. Experimental operation on a wide range of pulps and pulp blends has been carried out. A high degree of versatility is reported, without requirement for changes in the Former other than use of the adjustment provisions incorporated in the unit.

Advantages of the Former . . .

A most notable characteristic of the Former is its provision for adjusting and maintaining the ratio of ten-

sile strengths in the finished sheet. As is well known, the Fourdrinier has traditionally developed better cross strength than the cylinder machine. The Former can be said to be definitely better than the Fourdrinier, and therefore free of the inherent weaknesses found in conventional cylinder machines.

Uniformity of strength and basis weight is very good. No. 4 machine manufactures creped sheets in a variety of types and has also shown a high operating efficiency, the record being five days without a machine break and 24 hours without a break being quite common.

The engineering, manufacturing and sale of the Stevens Former is being carried out by Beloit Iron Works under the existing patents and patents pending. A program calling for careful study of the operating requirements of each proposed installation is being followed to insure successful installations in a wide range of applications. Refinements of design based upon actual operation are being incorporated in the Former as fast as they are proven. As already indicated, the "package" machine operating for Crown Zellerbach at Los Angeles uses one version of the Stevens Former. Other versions are in operation or being manufactured for different types of service.

A most interesting application of the unit will be for multiple cylinder board machines. It has already been put into service for top and under liner duty on folding boxboard with favorable results. Better coverage with a minimum of top liner stock, improved finish, and a better "bender" are all claimed. As the use of the Former is extended to all vat positions in such a machine it is expected that the removal of presently existing speed limitations will permit the multiple cylinder machine to move into materially high production ranges while retaining quality advantages.

Background on Erving Mills— Birthplace of "The Little Machine"

• Erving Paper Mills, birthplace of the "Little Machine that Dared to Run Away From Home," has one of the most extensive napkin lines in the U.S., according to David Hause, president.

Organized in Holyoke, Mass., in 1905 as the C. Elmer Pope Paper Co., the mill had one small paper machine and produced colored tissues, napkins and decorating crepe papers. Four years later the present site, on Millers

River at Erving, Mass., was purchased.

Creighton W. Whiting, who took control in 1908, changed the name to Erving Mills and later, in 1916, it was changed to its present name. At that time control had passed to Coleman H. Waite and George I. Walker. Later J. B. Rieg became associated with the company.

It was in 1927 that Morris Hause, mill manager of the Gill division of

American Writing Paper Co. at Holyoke, was asked to take over operations of Erving by a group of bankers who were worried about their investment in the company. One of his associates told PULP & PAPER that Mr. Housen "worked hard to take the mill out of the scrap heap and to make a first class mill out of it. He ran the mill and then sold the paper."

Later Mr. Housen learned that stock in the company was available at low cost. He went to see the bankers, told them he could do a much better job if he had a personal stake in the company and asked them to loan him enough money to purchase the stock. It was done.

Today Mr. Housen is chairman of the board. His mill makes some 40 tons a day of napkin specialties.

"Paper napkins is our biggest line," David Housen, Erving's president, told PULP & PAPER. "Whether you're eating in some small diner or dining 20,000 ft. above the clouds, there's a good chance you will find Erving napkins."

Today, Erving has two cylinder machines (78-in. and 95-in. wide) and one Yankee Fourdrinier, width, 100-in. It also has a complete converting department for its products. The company's line goes from industrial to household products, and its napkin line ranges from 50¢ per M, to \$14 per M.

William F. Erisman, executive vice president and general manager, told PULP & PAPER that their operation is one of the largest on printed napkins.

The average diner has no idea of the amount of skill required to produce a printed napkin. For instance, Erving has an art department staffed



DAVID HOUSEN, President, Erving Paper Mills: "Paper napkins are our biggest line."

WILLIAM F. ERISMAN, Executive Vice-Pres. and Gen. Mgr.: "U.S. napkin per capita consumption is around 8 lbs. per person."

with 5 highly skilled artists, turning out in the neighborhood of 50 to 60 printing plates a week.

The first step is to draw up a suitable design based upon a customer's sample. Sometimes, these samples submitted by customers are like the 1-in. sq. samples occasionally given to a papermaker with a request to "duplicate the sheet."

After customer approval, the next step is preparation of a Bakelite plate which must be held to tolerance of .005-in. Next are the metal plates which are held to .002-in. tolerance.

Special ink problems are presented in printing napkins. The ink must dry rapidly, must not have rub-off, must be odorless and must not be toxic.

Erving has 50 standard colors and can match thousands of shades of colors to customer's specifications. Its batteries of printing presses include some 4-color presses. Latest is a 4-color, 17-in. Paper Converting Machine Co. press.

The company has recently ex-

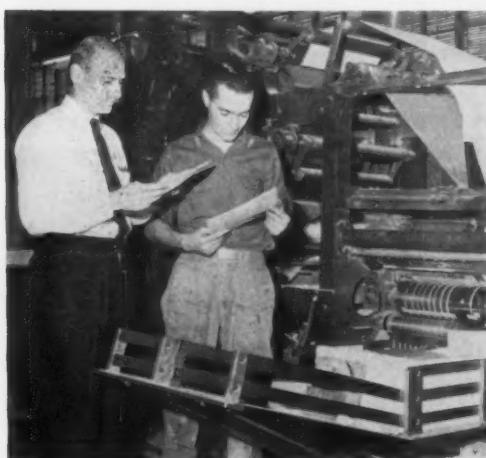
tended its distribution to the West Coast, says Mr. Erisman.

One of the company's claim to fame was its pioneering and leadership in development of multi-ply facial napkins in wet strength and non-wet strengths grades. One of its most recent designs is a grace prayer napkin, which carry a printed message of grace of all major faiths. Almost immediate national acceptance has made them a regular item in the line.

Recently the company introduced an all-weather windshield wiper, capable of absorbing water as readily at 40°F. as it does at 90°F. It is reportedly produced by a secret process.

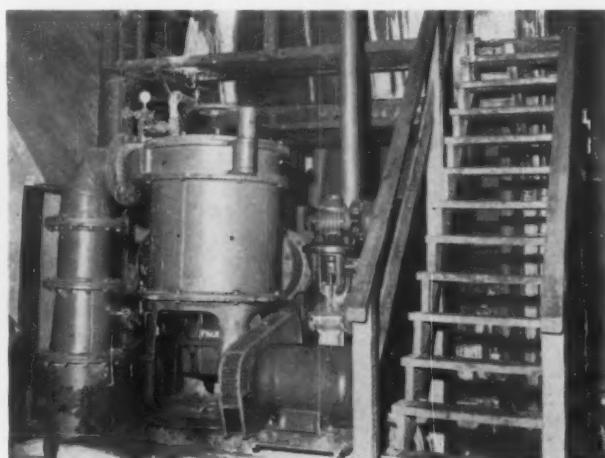
A Wedding

Morris Housen, chairman of the board, Erving Paper Mills, was married in the Janssen suite of the Waldorf, New York City, just the Wednesday before Paper Week meetings began in that same suite in late February. His bride: Irene Roy, of Holyoke, Mass. The Honeymoon? Paper Week, of course!

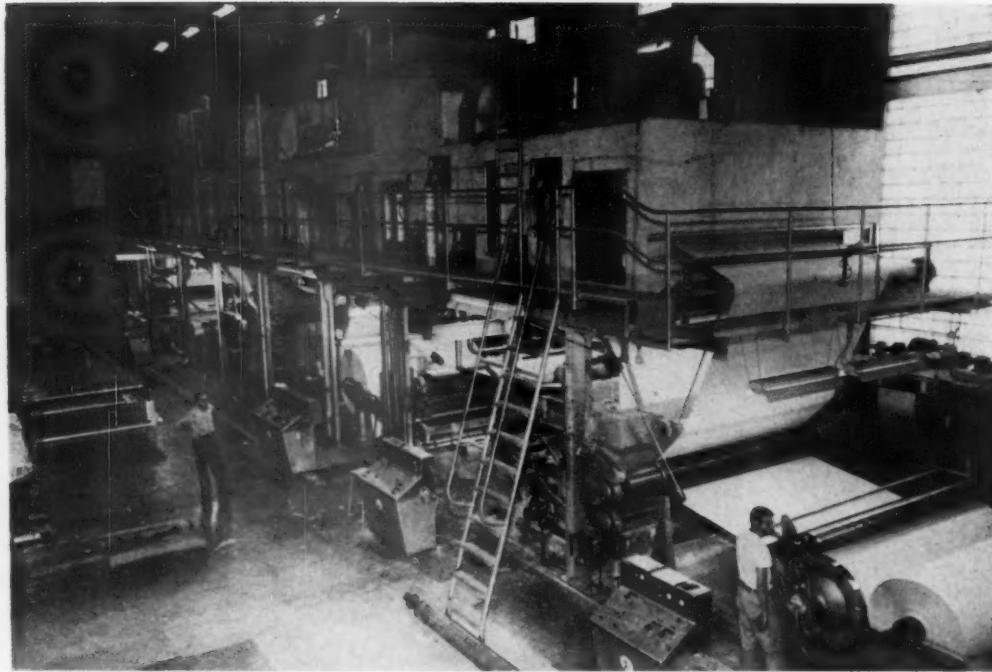


Recent Equipment at Erving . . .

Checking press run of new 4-color Paper Converting Machine Co. press are (l to r) MORTON SLAVIN, supervisor of converting, and HENRY PETERS, printer operator.



Stock for Paper Machine No. 4 at Erving makes a final pass through this Shartle Bros. Selectifier, following refining by high speed E. D. Jones jordans.



A New Off-Machine Coater

Blandin Paper Co. helped develop Rice Barton coater, shown here in operation at the Grand Rapids, Minn. mill. This is first machine of its kind ever built.

Trailing Knife Coater Is Success

Unusual features are described in this first story of an actual mill application, at Blandin Paper Co.

• A revolutionary trailing knife coater recently put into operation at Blandin Paper Co., Grand Rapids, Minn., has proved successful, according to Myles W. Reif, Blandin's executive vice president and general manager.

Developed through the combined efforts of Blandin Paper, *Look* Magazine and Rice Barton Corp., the off-the-machine coater has a normal operating speed of 1,500 fpm, with a range of coating weights, both sides, of three to eight pounds. It is the first machine of its kind.

Mr. Reif says that the auxiliary equipment is composed of all standard drive units and controls, the unusual features being in the actual design of the coating application heads. Continuous operation is maintained by use of a Rice Barton paster, with splices normally passing through at 600 fpm. They have, however, inadvertently made flying splices at over 1,000 fpm.

Groundwood coating base stock is used, the coater having been designed to coat both sides of a publication sheet (28-45# 25 in. x 38 in.-500). Roll size is 52 in. x 113 in. on, and 57 in. x 113 in. off, the coater. After the clay and starch coating has been ap-

plied, the sheet is supercalendered; this is done without rewinding or trimming. The coating color is not recirculated.

Blandin's average coated paper production of 80 tons per day is all going into publications, *Look* and *Better*

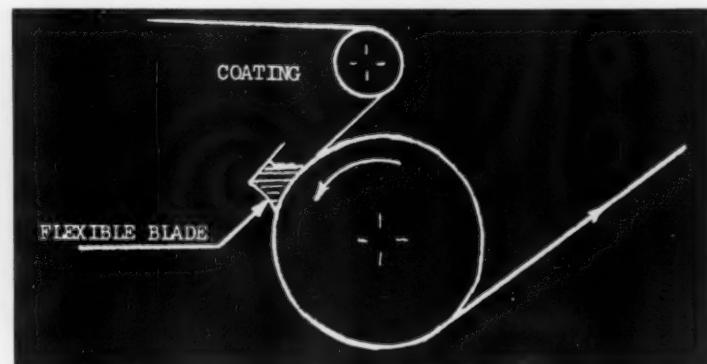


Diagram Shows How Blandin Coater Works

Blade is set in operating position. Head can be lowered for dumping color.

Homes & Gardens magazines being the satisfied customers. Normally the output is used for black and white letterpress printing, but some has been printed four-color.

Advantages are Cited . . .

When asked what advantages were obtained by coating what had previously been an excellent supercalendered text sheet, Harold F. Zigmund, assistant to Mr. Reif, answered that it improves the printing quality markedly. H. B. Tellschow, vice president of R. R. Donnelley & Sons Co., big Chicago printing house, says that his firm agrees. After printing several thousand tons of this grade, they feel that it constitutes a remarkable quality improvement of a groundwood filled sheet. Mr. Tellschow said that the levelness built into the sheet has proven helpful in increasing production, both in qual'ty and quantity.

Prior to installing this machine Blandin had never produced a coated paper. When Charles K. Blandin, former St. Paul newspaper publisher, founded the company during World War I, it consisted of a 25-ton newsprint mill. His good right hand through all the years has been his former associate in the newspaper business, Carl Kirk Andrews, vice president of the paper company.

By 1932 the firm had grown so large that a new home was built for it. Always eager to take advantage of modern ideas, Mr. Blandin chose to put up the first windowless brick and concrete building in the paper industry, and one of the first in the world. The mill started to convert from newsprint to high quality printing paper in 1943 and made its last roll of newsprint five years later.

Located 70 miles below the source of the Mississippi River, the mill continues to be up-to-date and photogenic. Installation of a groundwood mill with a modern exterior of Robertson Q type Fiberglas-insulated paneling and glass brick were completed in 1954. The windowless main building houses two Fourdrinier machines, 156 and 123 in., two supercalenders, 148 and 120 in., and rewinders. Windows were eliminated to achieve cleanliness and air and drying control for quality printing papers.

A rebuilt improved water power plant after the mill dam was lost in a flood eight years ago, an Appleton Machine supercalender and winder, screen room additions, an Allis-Chalmers Streambarker, a Shartle Hydrapulper and new pulp storage were other improvements of recent years. These were followed by improvements and speed-ups on the paper machines and the addition of a third power boiler, a Babcock & Wilcox unit which



Pleased with Their Coater

Executive Vice Pres. and Gen. Mgr. MYLES W. REIF (left) heads staff at Blandin which has put new equipment into operation. Assistant to Gen. Mgr. HAROLD F. ZIGMUND (right) says coating improves paper's printability.

virtually doubled mill steam capacity.

Besides pioneering in architecture and plant design, Mr. Blandin is also the founder of an innovation in human relations and industry's civic responsibility. In 1941 he established the Charles K. Blandin Foundation for the betterment of the community of Grand Rapids and Itasca County, Minn. The Foundation draws its income from the paper company.

The Foundation will not own the Blandin Paper Co. directly, but the major portion of income from Mr. Blandin's estate (which includes the paper company) will go to the Foundation. As C. H. Schacker, secretary of the company and also a trustee and secretary of the Foundation, put it, "Mr. Blandin didn't choose to do the usual or obvious. He wanted to be sure the paper company could continue as an independent organization for the benefit of its employees and the community in which they live."

There are ten trustees of the Foundation, including Mr. Blandin, Mr.

Andrews, Mr. Schacker and other business and community associates.

Personnel . . .

Now in his 80's, Mr. Blandin still is active as company president. Leo J. Thomas, vice president, assistant secretary and controller, has been with the firm for many years. Mr. Reif, graduate of Marquette University, was with Kimberly-Clark Corp. before he joined the company in 1942. With the retirement in Feb. 1957 of Mr. Andrews to an advisory and consulting capacity, Mr. Reif was named executive vice president. George W. Goetz, vice president, assistant general manager and chief engineer, is a graduate of Iowa State University. He formerly was head of a municipal power plant at Valley City, N. Dak.

Production and Traffic Manager G. E. Meyers, native of Grand Rapids, worked his way up through the mill. Technical Director Charles A. Richardson has been with the company since 1939. Other members of the Blandin team include M. J. Salisbury, woodlands manager, and E. E. Clark, purchasing agent, and Alvah Seiber, operating superintendent.

Sorry—Our Error

PULP & PAPER slipped up in reporting on the high intensity screens that are being used in the new Celulosa de Chihuahua S.A. mill at Chihuahua, Mexico, described in our February issue. Actually, there are ten primary and four secondary screens for the bleached pulp. On the unbleached side there are four Ahlfors screens as tailing screens, after two Cowan screens. The Ahlfors screens were built in Sweden.

The causticizing system of this plant was designed and built by Dorr-Oliver S.p.A. of Milan, Italy.



Windowless Mill Now Coats Paper

Constructed 25 years ago, mill is kept up-to-date with latest improvements like new coater.



Delegates from 21 Washington State Mills Concentrate on Safety

Many mill managers and top company officers are among these delegates to 11th annual Labor-Management Safety Conference in session at Olympic Hotel, Seattle.

Safety Problems Get Frank Airing

Record attendance from 21 mills convenes for 11th annual labor-management safety conference in Washington state

• A Scott executive's new slant on safety and his frank and open airing of safety problems in his own company scored a hit at Washington's annual Labor-Management Safety Conference.

Top management, safety supervisors and labor delegates turned out in record numbers (estimated 375 attendance) on Feb. 21-22 at Seattle's Olympic Hotel for the 11th yearly edition of the now-famous conference, representing the state's 21 member mills of the Pacific Coast Association of Pulp & Paper Manufacturers.

Scott Paper Co. Vice President Andrew J. Schroder II, director of industrial and public relations, called for lifting the "Curtain of Statistics" which obscures the human side of safety in every plant's safety record.

"Scott's safety record—good or bad—is known to all our employees. In 1939 with only one plant, Chester, we had a frequency rate of nearly 60. In 1955 the rate was down to 3.32 and for 1956 it was 3.34 in 14 plants. It was not until our safety program was completely overhauled that the rate began to drop.

"Our goal is no accidents in all plants, and we will not be satisfied until it is achieved. Even when accident rates are low, each accident still has its own tragic consequences. Families find little comfort in an excellent frequency record when their loved ones are the ones who are hurt."

\$1,000,000 in Ideas—Free . . .

There was easily \$1,000,000 worth of managerial and safety engineering talent on hand at Seattle to handle a round-robin Question & Answer session, designed to get everyone into the act of pooling safety knowledge. Here are some of the "nuggets" of safety ideas tendered:

Don't overguard machinery to the point where a safety hazard is born in just getting at the machine.

Every guard must be judged on its own merits. A guard should be considered a silent reminder of a danger spot.

A defective guard is worse than no guard at all.

CZ Port Townsend colors moving parts to effect a visual reminder, in places where mechanical guards are not feasible.

First aid instruction should be available to all employees, not just supervisors. All agreed: first aid classes are invaluable in getting employees to think safety.

Simpson Paper gives first aid kit to every employee completing a course.

Port Townsend has auto call which is sounded at time of an accident to bring all on-duty first aiders to the spot immediately.

Awards for plant safety campaigns, such as inter-departmental competition, are useful for short periods but will not build up a permanent interest in safety. They are just one of the

many tools available.

Coffee and doughnuts for everyone in a plant are better awards than valuable prizes for just a few.

"Awards don't make a program"—Oren Parker, IBPSMW.

Friendly helpfulness is best way to censure an unsafe worker. Coercion will not pay off.

Supervisors have primary responsibility for disciplining unsafe workers—not the safety supervisor.

Stewart Holbrook, author, in the keynote address, said there are many unsung heroes in safety and that they should receive more recognition than they do. Marshall Dana, assistant to president, U. S. National Bank, Portland, Ore., spoke at the awards banquet.

The Noise Problem . . .

A useful paper was one by Vern C. Karns, member of Paper Makers Local 130 at Crown Zellerbach, Camas, Wash., who has been designated by his local to study the noise problem and report findings to fellow workers. Mr. Karns ended his paper with separate recommendations to both labor and management:

"I would like to recommend to the union representatives here that your responsibility will be to tell your people this problem and explain it so that they will know that no one can step in and quiet a noise over night. That all noise is not harmful. It can be aggra-

vating. That no one can measure noise by ear. In other words, you can't tell if the noise is in a danger zone unless it is measured by an instrument.

"As to a recommendation by management: I know that every effort is being made to lick this problem, but how many of your people know you are working on it. Why not hold a meeting with the officers and some of the crews and give them some data."

These annual meetings are a joint project of the Pacific Coast Association of Pulp and Paper Manufacturers and the two international brotherhoods, the I.B. of Paper Makers and the I.B. of Pulp, Sulfite and Paper Mill Workers. Each of the three Pacific Coast states hold separate meetings every winter in principal cities on the coast. The meetings are a provision of the uniform labor agreement negotiated each year. Every mill sends labor and management delegates on an equal basis. Plant grievances are not aired on the convention floor.

The Washington state conference was chairmanned by Bill Gorbutt, personnel manager for Scott Paper Co.

Everett. Bill Thompson of Simpson Paper Co., Everett, was secretary.

Problem of Highway Deaths Inescapable at Safety Meet

Almost without exception, speakers at the Washington state labor-management safety conference devoted portions of their talks to the tremendous toll of Americans on the nation's highways. In fact, the featured banquet speaker, Marshall Dana of Portland, Ore., spoke for nearly an hour on what was being done in Oregon to curb traffic accidents.

The significance of highway deaths to industries is that a workman is just as useless in plant production regardless of whether he is put out of action at work or on the way home.

Safety Supervisor Really Gets Into the Swim!!

February is not considered the best month for swimming in the waters of Washington's Puget Sound but that didn't stop Bill Collins of Scott Paper Co., Everett, from taking a mid-winter dip.

Bill is safety supervisor at the big pulp

and paper mill. He got himself in for the swim act last year when Bill Thompson, safety supervisor for Simpson Paper Co., cross-town safety rivals, was thrown into the Snohomish river by fellow employees upon completion of 1,000,000 accident-free man hours. Bill Collins vowed he would outdo Bill Thompson when Scott workers performed a similar feat.

So when Scott reached its record, Bill Collins made good on his word and in 40-degree water set out for Gedney, four miles distant from Everett. Bill T. kept him company on the swim (in a nearby skiff).

Stream Improvement Project

The Mead Corp. has begun construction of a neutral sulfite recovery plant at its Heald Division at Lynchburg, Va., with completion scheduled for late October. The recovery plant and pulp washing and refining buildings are being constructed by C. L. Lewis & Co., general contractors of Lynchburg. The boiler and chemical recovery equipment is being designed, built and installed by Babcock & Wilcox Co. Swenson Evaporator Co., Harvey, Ill., is supplying evaporators and pulp washers.

The new recovery plant will wash waste from pulp, concentrate it in evaporators, and burn it. The ash will be converted to chemicals suitable for reuse in the pulp mill. This will be the first commercial-size plant to use this new patented process, developed by Mead's research and development dept. At peak volumes the process is expected to remove approximately 60-70% of harmful solids and organic material from the waste.



Second Year in a Row for Crown Z

1956 was an accident-free year at the big CZ kraft paper mill at Port Townsend, Wash., and it won them the Governor's Safety Trophy for lowest yearly frequency rate, presented by ED SORGER (left), state safety supervisor. Recipients are (l to r) NEIL FRANKLIN, personnel dept.; WM. LUPTON, labor representative; LEO ZIEL, resident manager; FRED SIMCOE, labor representative.



And More Safety Awards . . .

At left, two more awards for LEO ZIEL, resident manager of CZ Port Townsend mill, are presented by JOHN SHERMAN (l), vice pres., IBPSMW, Tacoma. Mr. Ziel holds Otto R. Hartwig award for lowest yearly frequency rate association-wide and National Safety Council's Zero Frequency award. At right, Mr. Sherman (r) presents Labor Management Safety award to JOHN BENNETT, in charge of engineering group, Rayonier, Olympic Div., Shelton, given to the plant with the lowest cumulative 5-year frequency record. This Rayonier division has won this award for the last four years, and also copped the Washington state award for lowest 5-year record.

No. 7 Runs at Longview

Longview Fibre Co. has its new No. 7 machine in operation at Longview, Wash. According to Vice Pres.-Res. Mgr. R. S. Wertheimer, it was inaugurated Feb. 28 at which time "it turned over and produced some paper." This 180-in. machine—of 250 tons per day capacity for board or 150 tons for paper and considered to be equally good on either—is a prime factor of Longfibre's current expansion bringing its kraft plant into the 1,100-ton per day magnitude.

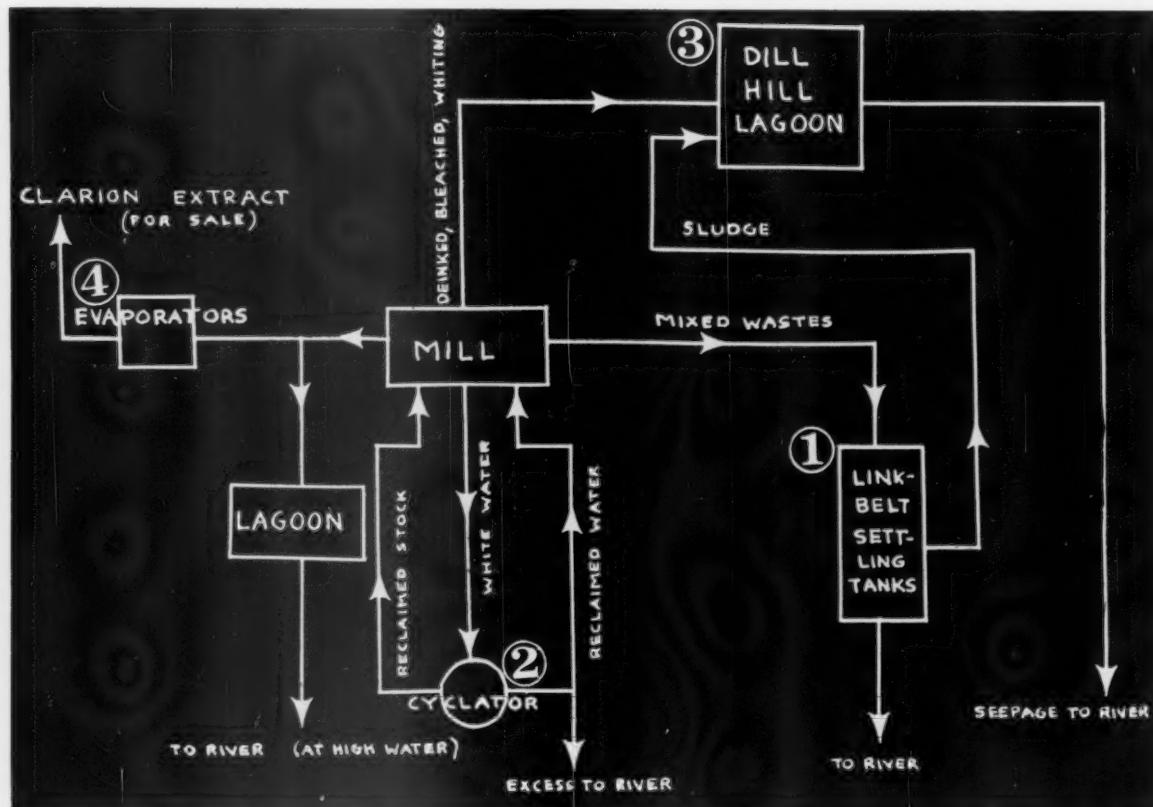
Michigan Fun Day Set For July 23

For the second year, Michigan Supts. and Kalamazoo Valley TAPPI will combine in staging a "Fun Day" at Gull Lake Country Club, near Kalamazoo, on Tues., July 23. About 350 are expected. P. D. Graham, DuPont pigments rep., is chairman.

Do You Have These Problems?

- 1** Do you have a complex problem in handling mill wastes?
- 2** In treating raw water?
- 3** Are you working on stock preparation?
- 4** How about improving acid preparation?
- 5** Is pulp cleanliness a problem?

See How New York & Penn Solved Them...



For a complex waste problem, a four-way solution

PROBLEM NO. 1

Complex Waste Problem?—Here's a Solution

New York & Penn figured out a way by using four distinct and separate units, which won state authority approval

- The Johnsonburg, Pa., mill of New York & Penn Co. is an integrated mill with three pulping processes: sulfite,

soda and de-inked magazines, together with an electrolytic bleach manufacturing plant, a calcium car-

bonate filler plant and a paper mill with five machines producing 250 tons a day, all located on the Clarion

New York & Pennsylvania Co., Inc. met these problems as part of its overall \$6 million spruce-up and get-ahead program—and came away smiling.

Here are five articles on how these problems were solved at Johnsonburg, Pa. mill of New York and Penn which may answer some of your own problems.

PROBLEM NO. 1: the Johnsonburg, Pa. mill has a complex waste treatment problem resulting from its three pulping processes; sulfite, soda and deinked magazines; together with an electrolytic bleach manufacturing plant, a calcium carbonate filler plant and a paper mill with five machines producing 250 tons a day.

Solution: Four separate and distinct units for handling the different wastes. They are: three Link-Belt settling tanks; an Infilco Cyclator; a 65-acre settling lake and Clarion Extract plant producing valuable by-products from waste sulfite liquor.

PROBLEM NO. 2 evolved from mine drainage upstream on the East Branch of the Clarion River.

Solution: A three-stage water treatment and filtering

River, a tributary of the Allegheny. The result: A complex waste treatment problem.

When the waste treatment plant was set up, it was established as a separate department with a full-time chemist in charge and eight full-time employees. As a result of this attention, and the construction of extensive treatment facilities, Keystone State stream authorities credit the company with doing a highly effective job in cleaning up a stream. Anyone familiar with the strict Pennsylvania stream control regulations will recognize that this kind of credit is not easy to come by.

There are four separate and distinct units for handling the different wastes:

1—Three Link-Belt settling tanks capable of handling 10,000,000 gpd of paper mill effluents and dilute pulping washes. Here, 99% of settleable solids, 70% of suspended solids and 20% of biochemical oxygen demand (BOD) are removed in the form of concentrate which is pumped to Dill Hill Basin, described as unit 3.

2—The Infilco Cyclator handles 3.0 million gpd of paper mill white water from the paper machine savealls. Coagulation with alum concentrates fiber and filler, which settles and is returned to the broke system. Clarified water flowing from the top surface is pumped to the mill for reuse.

3—Dill Hill Basin. This imposing 65 acre, 175 million gal. artificial lake receives the sludge from the Link-Belt units, filler and bleach plant wastes, and the caustic waste mixture from the de-inking of old paper. Retention time for settling and clarification is approximately 60 days and the supernatant water discharges over a weir to the Clarion River.

4—The major portion of the spent sulfite liquor is chemically treated to

remove acidity and scale-forming matter and after filtration is then concentrated in a five-effect evaporator, producing Clarion Extract. This is a material with adhesive properties, used primarily for ore briquet bonding in metallurgy, in the manufacture

plant for precise control of pH, hardness and mineral content of raw water.

PROBLEM NO. 3 was to provide separate and more accurate control of refining of raw stocks, more accurate proportioning of papermaking components with minimum variation in consistency and freeness and to increase economy of operations.

Solution: A \$1,200,000 highly automated stock preparation system which receives, refines, adjusts, stores, blends and delivers stock to five paper machines under precise control.

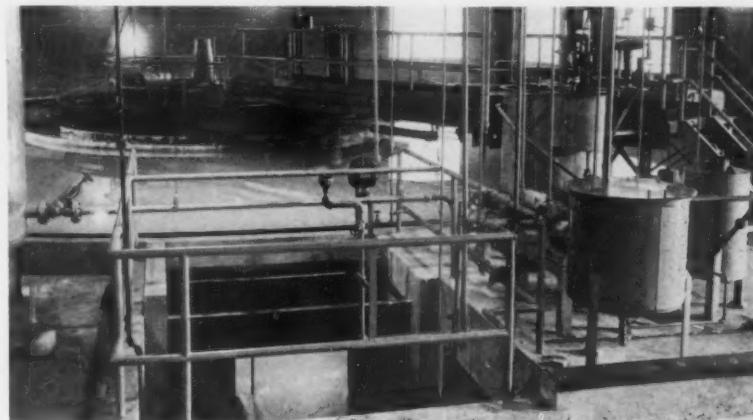
PROBLEM NO. 4 was how to achieve a higher pulping efficiency and improved pulp quality.

Solution: Starting back with sulfite liquor preparation, New York and Penn installed a 130-ton a day Chemipulp acid plant.

PROBLEM NO. 5 involved an upgrading in pulp quality with a corresponding decrease in operating space.

Solution: Substitution of Bauer Centri-Cleaners for flat screens resulted in a marked improvement in pulp cleanliness.

of linoleum cement, as a core binder in the foundry industry, in the making of dispersing agents, in oil well drilling, scaling, and in road making. Liquor not so processed and evaporated flows to a 16-acre, 55-million gal. earthen lagoon from which it is



Infilco Cyclator: for an Achilles heel, better than a 95% cure.



Link-Belt settling tanks: for effluent, a knock-out punch.

discharged to the stream under rigidly controlled conditions during high water stages.

Explained Howard Reuning, supervising waste engineer: "Studies of the individual wastes demonstrated the advisability of segregation of certain flows and the combination of others for most effective treatment. The final effluents discharged to the stream, although relatively unaltered volume-wise, contain less than 35% of the original organic pollution load (BOD) through removal of suspended and dissolved solids.

"The effectiveness of the treatment procedures that have been developed is reflected in the vastly improved condition of the stream. We maintain routine and frequent checks on the river to insure maximum operating efficiency at all times," he emphasized.

How the Cyclator Operates...

The Infilco Cyclator is housed in a building 120 ft. by 170 ft. The Cyclator is a 60-ft. dia. tank, 16-ft. deep with a capacity of 325,000 gals. Here effluents are detained for about four hours.

Effluents from the paper machine white water savealls are first coursed over an Infilco cascade deaerator to liberate entrained air that would inhibit proper separation of solids and water.

An alum make-up system consists of two Milton Roy pumps, which adjust the rate of flow of alum to the rate of water intake through the Cyclator to the desired ratio. Alum addition ranges normally between 2.0 and 3.0 grains per gal. white water treated. Liquid alum is stored in a 2,600 gal. capacity rubber-lined tank.

In the center of the Cyclator is a 4 to 10 rpm pump-like circulator which agitates water at three times the incoming rate to help in flocculating by mixing the incoming particles with the suspended slurry. Samplings are taken every hour. The two-armed, five-blade scraper is powered by a

1-hp, 1800 rpm Armor motor with gear unit.

The inverted-cone-shaped collection box is 6-ft. dia. at the top, 2-ft. at the bottom, 5-ft. high, with an 8-in. pipe outlet. Two rubber diaphragm valves, timed to the flow of the unit, open about every 4 min. to dump. The scraper blade requires 38 min. for a complete revolution.

A Fischer & Porter Chlorinator mixes dry chlorine gas with water which is pumped to the sludge in the Cyclator for bacteria control at the rate of about 40 lbs. a day. The circuit is protected by a vacuum breaker to prevent possible escape of gas into the atmosphere.

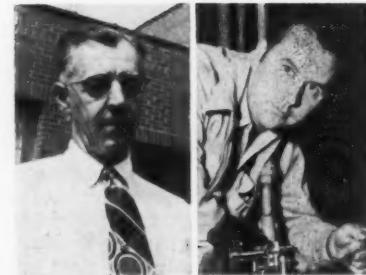
Clarified water overflows from the Cyclator unit over a weir and into the clarified water storage tank before being pumped back to the mill by two 1500-gpm (60-ft. head) Pomona turbine pumps by Fairbanks-Morse driven by 30 hp General Electric motors. The 300-ft. return run to the mill is through a 14-in. Transite line.

This clarified water is used principally for dilution of sulfite and soda stock prior to lapping. Following sand filtration, the water is suitable for paper machine showers. What can't be used goes to the stream, said Ed Clerkin, waste treatment plant supervisor. At present, reclamation is higher than 95%. Ultimate aim: 100%.

Sludge is returned to the mill by a Fairbanks-Morse 300 gpm (85-ft. head) centrifugal pump, 15 hp motor, and the reclaimed stock goes to the broke system. Some 10 to 15 tons a day of reclaimed fiber and filler is recovered.

The sludge accumulation rate, if increasing, is indicated by an alarm on the drive unit. When the torque on the scraper drive exceeds a specified limit, a spring loaded gear trips a micro-switch to activate an alarm signal which notifies the operator that the rate of sludge removal should be increased.

Another interesting device, pointed



Arranged a Happy Ending

HOWARD REUNING (left) waste treatment engineer and ED CLERKIN (right), waste treatment plant supt.: "After nightmares, a vastly improved stream."

out by Mr. Clerkin, is the Builders-Providence telemeter which records the flow of clarified water over the weir; indicates it in thousands of gallons and totalizes.

A float at the clarified water weir rises and falls with the level variation and sends an impulse to the meter. The meter records in figures the total quantity that passes through the unit in a given time, the flow in gpm and the total quantity.

The three Link-Belt sedimentation units are 140-ft. long, 33-ft. wide and 12-ft. deep. Retention here is about 2.5 hours for proper settling of solids. Twenty-four hour composite samples are taken five times weekly for chemical and biological analyses.

These units are gravity fed to the Link-Belt bar screen. Three 5,000 gpm Warren input pumps, with 26-ft. head, and powered by 50-hp motors, lift the wastes to a distribution box. Two pumps handle the flow, with the third one on a standby basis for emergencies.

From the distribution box, the effluent is gravity fed to the settling tanks through one 30-in. steel pipe and three 18-in. steel pipes. Flow is adjusted into the settling tanks by slotted baffles to even out the flow.

What Happens at Dill Hill Basin...

Sludge from the bottom of the settling tanks is scraped to a sump by longitudinal and cross-collector flights travelling 6-in. per min. Hydrostatic head forces the sludge to a well from which it is pumped by a 175 gpm Carter Duplex plunger pump to a Bird-Jonsson vibrating screen (3/16 in. perforation). The screened sludge flows to a concrete sump that receives de-inking, filler and bleach plants wastes. From this sump the combined sludge and wastes are pumped by a 1600 gpm, 60 ft. head Warren pump with Reliance motor to the main Dill Hill pumping station. A duplicate pump and motor are provided for emergencies.



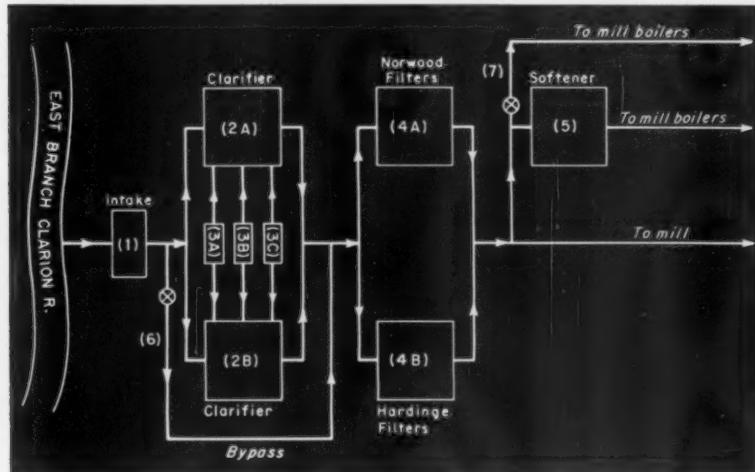
Infilco Deaerator: for entrained air, liberation.

The Dill Hill pumping equipment consists of three 1,000 gpm, 210 ft. head, Ingersoll-Rand centrifugal pumps driven by 100 hp Westinghouse motors. One pump continuously remains on standby basis. The waste is discharged to the basin through a 12-in. Transite line 7,100 ft. long. Total lift is 325 ft. and operating pres-

sure 190 psi.

The flow of effluent to the sulfite lagoon varies according to the sulfite evaporator operations. Because of the distance involved (1.25 miles) from the waste treatment plant, some measure of control had to be taken to assure prevention of overflow in event of a power or pump failure.

centration of impurities to a danger point. With the dam limiting the river's flow on a year round basis, however, manganese, iron and acid became a 12-month problem. This was not eased by the growing concentration of impurities in the lake formed by the dam. These circumstances prompted construction of the water treatment plant.



Flow diagram of water treatment plant

1—Water intake; 2A, 2B—Infilco Clarifiers; 3A, 3B, 3C—Wallace & Tiernan feeders supplying flocculants; 4A—Norwood filter; 4B—Hardinge filter; 5—Infilco water softening system; 6—Bypass around Clarifiers; 7—Bypass around softening system

PROBLEM NO. 2

How Water is Treated

Solution to complicated problem at Johnsonburg mill proves to be system that operates in three stages

● Precise control of pH, hardness and mineral content of raw water supply for the Johnsonburg, Pa., mill of New York & Pennsylvania Co., Inc. is effected by a recently completed \$1,750,000 water treatment and filtering plant. It serves a mill producing 100 tons a day of sulfite pulp, 135 tons of soda pulp and 263 tons a day of book paper.

The new system is designed to remove large quantities of iron and manganese salts, detrimental to quality pulp and paper production. In addition, reports Water Treatment Plant Supt. Alvin Sallack, precise pH control has largely eliminated costly corrosion of supply lines, pumps, boilers, coolers, condensers and other mill equipment caused by acid in raw water. Bacteria content of the water is also under rigid control.

The Johnsonburg plant is divided into three stages: Chemical treatment, filtration and mill boiler water softening.

ing. Completely instrumented with a Foxboro control panel, the plant requires two men per shift.

The new system replaces a simple filtration setup that used Norwood and Warren filters. The Norwoods have been integrated with the new facilities. The plant was designed to New York & Penn specifications by Rust Engineering Co.

Problem Got Worse . . .

Water is taken from the East Branch of the Clarion, a tributary of the Allegheny. For years this stream has had an increasing concentration of manganese, iron and acid loaded drainage from open strip coal mines.

A federal flood control dam was constructed several miles upstream from the mill in 1951. Prior to this, mine drainage was a serious problem only during summer months when low water conditions raised the con-

How System Operates . . .

In the primary stage, chemicals are added to raw water to reduce acidity, remove large quantities of manganese and iron and control bacteria.

At the system's intake, a Chain Belt Rex traveling screen removes large floating materials. A Byron Jackson pump directs a water spray onto the screen for removal of trash. Three gated concrete wells, one for each of three intake pumps, follow up the screens. For pump maintenance, each well can be individually closed off. Intake pumps are 8,000 gpm Fairbanks-Morse units powered by 150-hp motors. Two are in continuous service; one is a standby.

Chlorine is added to raw water in the forebay ahead of raw water pumps. Primary function is to assist in oxidizing the iron and manganese salts so they can be removed by subsequent treatment. Chlorine also destroys organic matter in the water thereby reducing the fungi and bacteria. An average of 800 lbs. per day of chlorine is metered into the water by a Wallace & Tiernan chlorinator. From here fresh water is pumped through a 36-in. cast iron line to the Clarifier building for further treatment.

In the Clarifier building the 36-in. line divides into two 16-in. lines, each feeding one of two 69-ft. sq. by 23-ft. deep Infilco Clarifiers. Bypass valves in the piping gallery make it possible to send the water directly to the filter section in emergencies or when Clarifiers are down. Diaphragm-operated butterfly valves, controlled by the clearwell level and set for a certain depth, open an inlet valve to the clarifier.

Each Clarifier is rated at 10 million gpd and has a 19-ft. long impeller driven by a Reeves variable speed drive.

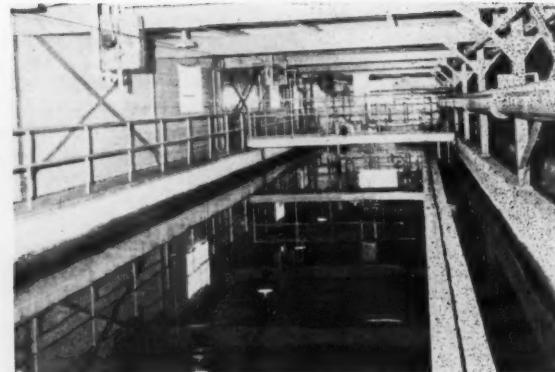
How Chemicals are Used . . .

Lime and alum are added in carefully controlled amounts to adjust pH and form the ferro-manganese floc which is weighted and carried down by the addition of pulverized limestone. This reaction takes place in the primary and secondary mixing zones of the clarifiers.

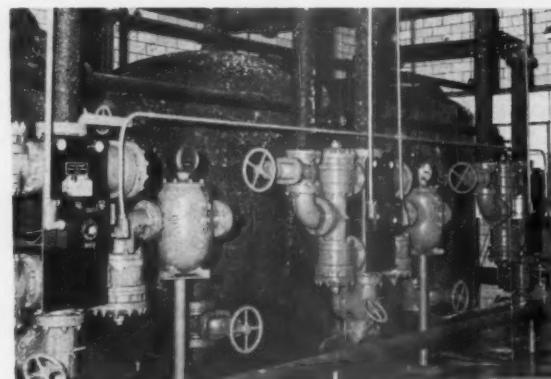
Floc formation and settling rate can



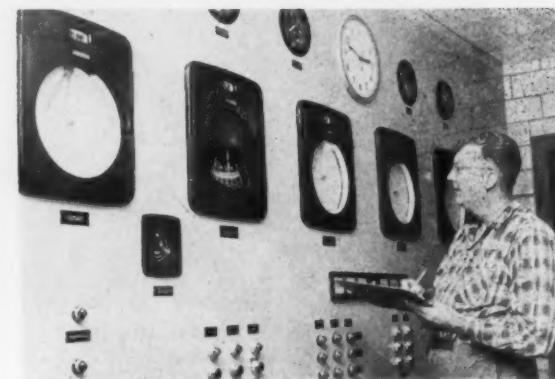
Chlorination . . . to reduce fungi and waste



Filtration . . . to remove suspended solids



For water softening . . . ion exchange filters



For better operation . . . centralized controls

be further controlled by the variable speed agitator in the primary mixing zone. Combined action of chlorine, lime, alum, agitation and the catalytic action of the circulated sludge result in practically complete elimination of iron and manganese. The reaction is automatically controlled by controlling and recording Beckman pH meters and flow meters on the Foxboro master control panel. Amounts of chemicals required depend on the water conditions and demand.

Clarified water has a pH of 9.2 as compared to 4.3 of the raw water. Iron and manganese content is reduced from 1.5 ppm to less than 0.05 ppm.

Flocculating chemicals are moved to the Clarifier building from a rail siding and are unloaded onto a Rapistan power belt conveyor. From storage, chemicals are charged into the Sprout-Waldron supply tanks, each holding a two days' supply. Chemicals feed directly into Wallace & Tiernan feeders equipped with Lightnin mixers. Syntron shakers aid in flow of the chemicals into the feeders.

Of interest is a solenoid valve rigged up by New York & Penn men on the lime mixer to shut off the water to maintain a certain concentration of lime.

The raw water and the flocculants

are suitably mixed in the Clarifiers for complete separation of the dissolved salts by precipitation and the clear water is removed by overflow launders and conducted to the filters.

The two new Hardinge filters, rated at 6,000,000 gpd each, have automatic back-wash cleaning system. Actually, peak loads up to 8,000,000 gpd can be handled. Mr. Sallack reports that every trace of suspended solids is removed from the water by these parallel filters.

After filtration, water is pumped through a 30-in. and 16-in. line to the mill. Output pumps are 8,000 gpm Fairbanks-Morse driven by 100-hp motors.

How Water is Softened . . .

In the softening section for boiling water, water that is used to generate an average of 700,000 lbs. of steam a day is reduced in hardness from 45 to 55 ppm down to 2 ppm to 3 ppm by a battery of three Infilco ion exchange filters. Combined capacity is 1,500,000 gpd or about twice normal mill needs.

Softening is effected by removal of calcium salts and the substitution of soluble sodium salts. In emergency, softening system can be bypassed and water from the Clarifiers can be sent directly to the boilers through a 16-in.

Transite line.

The softeners use a Zeolite resin filter that is periodically regenerated by backwashing with a saturated saline solution. Operation of the backwash is completely automatic. Any one of three softening units can be individually recycled without shutting down the others or otherwise interrupting operations of the entire stage. Each softener is equipped with a Trident-Crest flow meter. All equipment in this stage has been coated with a spray type insulation to prevent sweating.

A salt storage tank for backwash holds 300 gals. of salt solution. This tank is automatically refilled from saturated brine storage tanks just outside the softener building. Brine is automatically diluted to proper concentration on its way to the salt storage tank. Softened water is sent on to the mill boilers by Ingersoll-Rand pumps.

Supervisor Sallack sums up almost a year's operations: "The water treatment plant has worked without a hitch since completion, with only nominal preventive maintenance."

Mill men report that boiler and pipe maintenance and replacement costs have been materially reduced and attribute it directly to the new plant.

PROBLEM NO. 3

Stock System Upgrades Quality

Continuous and automatic preparation of stock saves manpower and reduces maintenance at Johnsonburg

● Better quality paper and more consistent operation of five paper machines—these are improvements brought about by a new \$1,200,000 stock preparation system at the Johnsonburg, Pa., mill of New York & Penn Co.

Through a high degree of automation, stock is received, refined, adjusted, stored, blended and delivered to five paper machines under precise control.

Also, dry and wet broke, together with reclaimed solids from white waters are collected, prepared, blended and delivered to the machines.

Five paper machines with an average daily output of 260 tons are supplied by this system and the entire installation is set up in duplicate providing almost unlimited future capacities.

Primary objectives are:

1—Separate and more accurate control of refining of raw stocks (sulfite and soda).

2—More accurate proportioning of papermaking components with a minimum of variation in consistency and freeness.

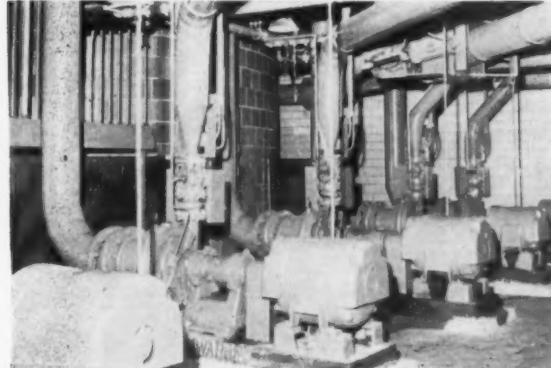
3—Increased economy of operation: (a)—Reduction of operating force by 56 men. (b)—Decreased maintenance through removal of beaters. (c)—Elimination of operations required to lap sulfite pulp.

Only six men per shift are required for the complete stock preparation system. One man handles the main control panel responsible for all stock flows to the department, metering the flows through the refiners and controlling the proportioning to the paper machines. Two men check freeness, pH, consistency, etc. of the process stocks, operate the refiners and mix the color. Three men handle the collection of broke, operate the Hydrapulper, savealls, broke jordans and the broke delivery network.

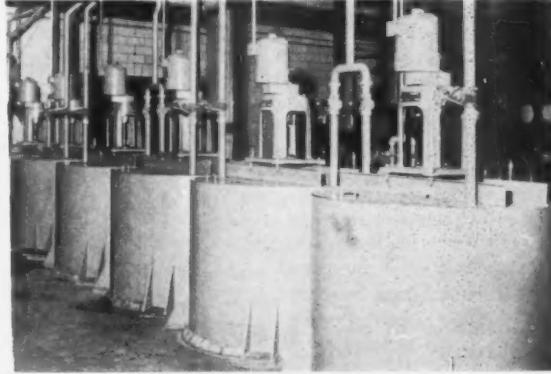
Principal equipment:



For five paper machines, one panel



For outages, dual stock pumps



For color control, careful mixing



For blending stocks, proportioners

Nine Stebbins tile-lined storage chests (two 16,000 lb.) for 4.5% consistency (unrefined) sulfite; two for unrefined soda; two for 3.5% refined soda with 12,000 capacities; one chest for 3.5% refined sulfite pulp (12,000 lb. capacity); and one 12,000 lb. 3.5% deinked stock and one white water tank.

Stock agitation is by an Impco neoprene-covered vertical agitator powered by 30 hp Elliott motors with Falk reducers.

Positioned at all points where an outage would affect production of more than one machine are dual Warren stock pumps. Each is equipped with DeZurik valves operated by Hanna air cylinders and Valvair solenoid valves actuated by pump motor starters. These act as check valves to prevent reverse flow through the standby pumps.

Stainless steel piping, type 316 ELC, is used throughout.

Control and instrument air is supplied by two Ingersoll-Rand compressors, each with a capacity of 304 cfm at 100 psi. One compressor supplies air for the entire system. Instrument air is dried by a Lectro dryer before going to the control panel.

Refiners (6) are E. D. Jones Standard jordans with special stainless steel fittings, each driven by 300 hp synchronous Electric Machinery motor.

Flow of Stock in New System . . .

Pulps, each in its own system, move from storage at 4.5% consistency to the refiners. From refiners, the stock is adjusted by DeZurik regulators to 3.5% consistency before going to final storage.

From the chests, the pulps are pumped through Fischer & Porter flowrators where their flows are controlled according to predetermined requirements.

A sensing unit in the paper machine chest signals when stock is needed or is in excess. This signal increases or decreases the flow of sulfite pulp, the governing stock, through the flowrator. As soon as the volume of sulfite pulp changes, the flow of soda and de-inked stocks will also change in exact proportion to whatever ratio has been previously set for these two stocks in relation to the sulfite feed. Once it has been determined what percentage of each type pulp is to be used, appropriate settings of these proportions are made on the control panel and thereafter these proportions will be maintained regardless of the volumes.

Each paper machine has its own complete set of proportioning equipment.

Color solutions for each machine are prepared in a battery of six stainless steel tanks; each with a Lightnin mixer. These colors in liquid form are added after stock blend.

The entire production of the Johnsonburg mill goes through this system. Quality control includes the strict emphasis by the New York & Penn on color, especially on fine paper production.

This continuous and automatic stock preparation system is reportedly the largest of its kind in the country.

More about Stock System

By HARVEY KROUSE
Fischer & Porter Co.

The change-over from a beater-batch system of furnish for Johnsonburg's five paper machines required continuous proportioning equipment, flow meters and ratio controlling instruments. For storage of refined stocks, various pulp slurries are refined continuously at a controlled rate of flow.

In refining, sulfite and soda stocks are delivered to storage chests from the pulp mill at 4% consistency, pumped through refiners through Fischer & Porter stock flow meters which measure rate of flow and transmit pneumatically this flow rate to the panel. Ratogate control valves on the refiner outlet are throttled by controlling instruments to maintain a predetermined flow rate. Stock is then diluted and kept at 3% through DeZurik

consistency regulation and delivered to refined stock chests.

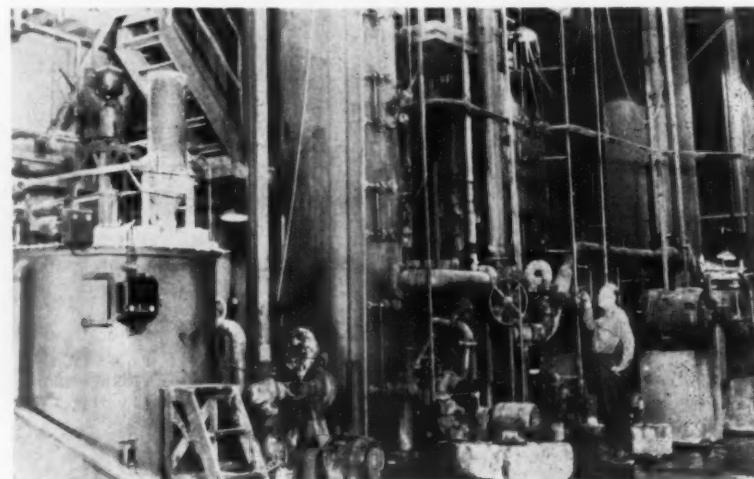
In supplying the proportioned furnish to machine chests, sulfite flow is throttled by a ratogate control valve, which is positioned pneumatically by a level control instrument sensing the level of the respective stock chests. Sulfite is metered and its flow rate transmitted to the panel pneumatically to two ratio controllers, which proportion the flow of soda and old paper stock. A fourth furnish, broke, is also metered.

The three controlled and automatically proportioned stocks empty into a mixing

chest. Here colors are added and measured by visual indicating Flowrator meters. Furnish is then pumped to the machine chest where broke is added.

The rate of blending is dictated by machine chest level. As the draw-off from the chest varies, the level instrument controlling sulfite flow varies this flow to maintain a predetermined level setting. The flows of old paper and soda vary proportionally to sulfite flow.

In addition, flowmeters also provide integration of the stock that is passed through the respective instruments and thereby provide an inventory advantage.



Heart of plant is reversible-type Chemipulp absorption tower

PROBLEM NO. 4

Improve Acid Plant Efficiency

Some problems to overcome at Johnsonburg mill, but N.Y. & Penn came up with improved pulp as a result

• The above picture is called the heart of the 130-ton-a-day acid plant of New York & Penn Co., Johnsonburg, Pa., called one of the most outstanding of its kind in the country.

What is achieved here to increase efficiency:

1—An unusual degree of control of acid which makes for higher pulping efficiency and improved pulp quality.

2—Accurate control of the sulfur burning process to produce a high concentration gas with minimum loss of sulfur.

3—Gravity flows and automatic handling of lime and sulfur throughout.

Engineering Problem Overcome . . .
To make this an economical oper-

ation it was necessary to keep the height of the railroad trestle to a minimum and yet have a waterproof basement to house the storage bins, sulfur melter and lime slaking equipment. (Some of this equipment is below river level.) Solution: A double wall of water-resisting cement with an asphalt membrane between.

Railroad cars with lime or sulfur are moved along the trestle (about 25 ft. high), into an unloading shed where the contents are discharged directly into storage bins underneath the tracks. There are two bins for each, with each bin having a capacity of two cars or 200,000 lbs.

Aided by Syntron shakers on the bottoms of the storage bins, sulfur drops into a conical melter and

then flows into a constant level rectangular tank with capacity for 30 hr. run. The molten sulfur is then moved by a positive type Hasco metering pump to the conventional rotary burner.

All ductwork, pipes, etc. for flow of hot gas are arranged in a twisted pattern to maintain constant agitation and mixing of gases.

How Gases are Cooled . . .

The hot gases pass through a refractory lined pipe into the Chemipulp-KC spray type SO_2 gas cooler, consisting of a primary cooler where the temperature is dropped to about 160°F. and a secondary cooler to remove heat. The spray type cooler is a departure from convention in that the burned gas is cooled by direct contact or mixing with spray water rather than by surface cooling. This is done by dividing the cooling process into two steps. In the first or smaller tower, the incoming burner gas is flash cooled by intimate concurrent contact with a small flow of weak acid supplied through a single spray nozzle located in the gas stream. This type of cooling is practically instantaneous and the burner gases at a temperature of over 1500°F. are cooled to 160°F. in a space of only a few cubic feet. Evaporation of spray water (weak acid) causes this sharp drop in the first tower.

While the gas is lowered in temperature in this first tower, it still contains most of its original heat as latent heat of the water vapor produced. This cooled gas then passes through a second (packed) tower where the heat is removed by the circulation of a weak sulfuric acid which carries the heat to a water cooled heat exchanger and then returns to the tower to absorb more heat. Sulfuric acid accumulating in this system is removed by using a portion of this circulating acid to supply the spray in the first tower.

Final Steps in Process . . .

The cooled gas passes to a Roots-Connersville rotary compressor driven by a 75 hp Imperial Electrical Co. motor with adjustable speed Alis-Chalmers V-belt drive.

Lime from storage bins is flowed by gravity and Syntron conveyor to an automatic scale and into a Dorr-Oliver continuous slaker where inert material is removed and the finished milk of lime pumped over into two agitated storage tanks. From these it is pumped through a metering device to the special Chemipulp absorption towers where it meets the gas delivered by the compressor.

The two absorption towers are reversible to permit automatic removal of local accumulations of calcium monosulfite. They are designed for operation at pressures somewhat above atmospheric. Although this mill uses lime base, the towers could also be used in the preparation of acids and using either a soda or ammonia base.

In this plant two reclaiming towers are used to fortify the raw acid with the strong gases returned from the cooking process and any gases that must be discharged to atmosphere from this part of the system are first passed through a small tail-gas tower in which traces of SO_2 are absorbed in water to prevent any loss from the system.

PROBLEM NO. 5

Some Records on Pulp Cleaning

• A marked improvement in pulp cleanliness has resulted at New York & Penn's Johnsonburg mill since installation of Bauer Centri-Cleaners, reports Mill Manager R. Neal Jones.

Spot checks of Centri-Cleaned pulp show an average of less than 20 speck and shive count per 8-in. by 8-in. sample. Previous counts went as high as 70 spots per unit.

"The \$250,000 installation was made with an eye toward maximum efficiency," says Mr. Jones. "Clean pulp is produced by the system with a minimum loss," he says.

Three stages are used. To assure absolutely clean pulp, accepted stock from the second stage can be pumped back into the primary for an extra cleaning. Accepted stock from the third stage passes through an extra cleaning cycle in the secondary stage.

Mill records show that about 10% of the input into each stage is rejected; with three stages only about 1/10-lb. in every 100 lbs. is rejected. Total rejects from the third stage amount to 500 lbs. The company's experience indicates that beyond the third stage cost of extra equipment is not justified by additional cleaning action.

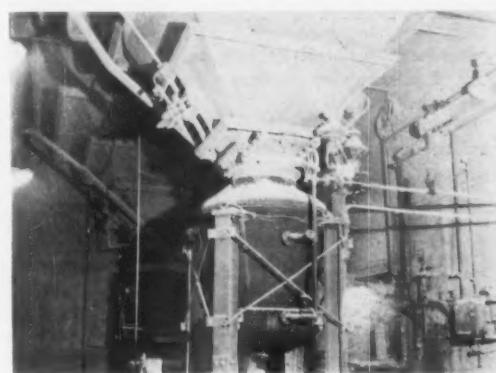
On sulfite pulp there are 61 No. 606 Centri-Cleaners; 14 in the first stage, 2 in the second and 1 in the third. Flow pattern is similar to that of sulfite pulp. Rejects from the first and second stages are collected in separate vats and pumped to their succeeding stages. No vacuum manifold is required.

Accepted stock from the cleaners is thickened on an 8-ft. by 16-ft. Impeo thickener, stock is adjusted to 4.5% consistency by a DeZurik regulator and channeled to the storage chests. Daily capacity of soda pulp cleaners is 150 tons. Pipe fabricators of these were E. C. Wolferz.

Incoming sulfite pulp from the

Sulfur Processed Automatically

Bottom of sulfur bin showing Syntron shaker and melter





World's Biggest Commercial Printing Plant . . .

In the biggest publishing and printing center in the world—Chicago—is this largest of all commercial printing plants, R. R. Donnelley & Sons Co., at 350 East 22nd St. Last year it launched a substantial expansion, and recently purchased Crowell-Collier printing plant in Springfield, O., for the purpose of moving and utilizing the equipment. It uses coated and printing papers from many mills, to print a long list of well known magazines and other publications, including *Life*, *Time*, *Look*, *Farm Journal*, *Sports Illustrated*, *Encyclopedia Britannica*, other encyclopedias, etc. Only the U. S. Govt. Printing Office is bigger than Donnelley—bigger in number of employees, but not in tonnage.

What is Required in Coated Paper For High Speed Letterpress Printing

BY ALEX GLASSMAN
Paper Specialist,
R. R. Donnelley & Sons Co.

• Modern high speed printers require of coated paper stocks that they have particular qualities. These are: 1, runnability of the paper—in the press and the operations that follow; 2, ability to reproduce art copy with fidelity, uniformly and with desired gloss of inked areas, and 3, a glossy white appearance and smooth "feel" of luxury and quality.

These qualities must be consistent with the continuing need for good basis weight control, caliper and control of usual paper attributes, such as color and gloss.

But while existing controls are important and must be continued, there is a need for more meaningful tests.

Leading paper companies have collaborated with the printing industry to develop more meaningful tests for requirements of the heatset letter press process.

A so-called "hot fold tensile test" has recently been improved upon by a paper supplier, for example. This

tensile-at-fold test is illustrated with this article. It correlates with important aspects of bindery performance and folder operation. Another useful test now available is a method of measuring relative tolerance of coated paper to printing impression.

These will be discussed as we consider each of the three primary requirements listed above for coated paper:

1. Runnability . . .

Modern printing presses running at speeds approximating the fastest paper machine speeds, require paper that will run through the presses with a minimum of down-time. In

this paper, the main point is not to discuss the causes of press down-time, a large and important subject in itself, but how printing quality is affected by various factors, including down-time.

It is a fact that a large press may take 20 min. to half an hour to reweb and start up again after a break. During that time, ink in the fountain, and on the rollers that distribute the ink, has been changed so that ink film properties no longer represent equilibrium conditions. As a result, color is no longer in control, and the loss due to poorly printed matter may exceed the loss due to lost time alone. In heatset printing, the heat adjust-

Tells How Mills and Printers Cooperate

If your mill makes coated paper for magazines and catalogs, this article by a paper industry "expatriate" who now is engaged in the printing industry will tell you how your paper is evaluated by newest methods for quality and high speed printing.

He tells how mills worked with R. R. Donnelley & Sons in research projects. West Virginia Pulp and Paper Co. and Kimberly-Clark Corp., for example, collaborated with the printing company and worked out research projects of value to both.

ments on the press will no longer be in equilibrium, resulting in possible scorching, or poor ink drying, that will tend to further lower the quality of printing.

When a press is not in equilibrium (not "warmed up"), how can one satisfactorily determine if the ink is correct, or if perhaps other adjustments such as printing pressure are correct if the paper quality is below standards? As a result, actual printing quality is off, regardless of how good the other printing qualities of a paper might be.

Good runnability is the first requisite of quality printing. In roll stock good runnability generally means a minimum of web breaks. The criteria for determining "runnability" are not completely solved. Elmendorf tear strength taken in cross direction is, we believe, a valuable guide.

Papermaking defects such as wrinkles, hair cuts, fiber cuts, poor splices, poorly wound rolls or glued cores, slime holes and the like are responsible for a large number of breaks. Web weaving and poor winding are serious defects.

Defects arising from shipping and handling such as starred rolls, weather welts, burst, etc., cause serious press running delays.

We do not believe that it is at present possible to specify runnability by bench tests such as cross directional Elmendorf tear, mullen or by hardness of rolls, etc. We expect the paper mills to deliver rolls of paper such that there shall be no more than 5 or 10 breaks per 100 rolls, on the average, depending on basis weight. In this connection, we report back to our suppliers all web breaks that have occurred in the preceding day, together with evidence from these breaks on "roll cards." These cards are originally prepared by the mill, and thus each individual roll defect can be traced to the individual machine and the crew that manufactured, supercalendered, or rewound the roll.

"Quality" Running Properties

A paper can not be classed as having runnability only because it runs without breaking through a press. There are certain additional requirements for adequate runnability for "quality" running properties which are needed. Some of these include:

(a) **Impression tolerance**—Such that the printing constancy can be maintained with wear of printing plates, packing wear and slight variations of paper caliper. A more detailed explanation of the meaning of impression tolerance will be given in the second section.

(b) **Absence of Blistering**—Blister-



The Author . . .

ALEX GLASSMAN, author of this article, is paper specialist in the Engineering, Research and Development Div., R. R. Donnelley & Sons Co., Chicago. He joined the Chicago printing firm in 1953, coming from St. Lawrence Corp., Three Rivers, Que., where he was assistant technical supt. Born in Montreal, he graduated from McGill University in 1946, with a degree in chemical engineering.

ing can occur in heatset printing when moisture content is in excess of the amount that can be driven through the sheet sealed by the ink film that is applied in letterpress printing. Our experience indicates blistering occurs mostly on heavier weight coated sheets, and that for a given rate of heating it can be predicted by Gurley porosity tests.

(c) **Scorching**—Properties of coated paper in heatset are important in determining the final appearance and color of the printed sheet. Often the total gain of G.E. brightness points, attained by bleaching of perhaps the groundwood furnish, may be lost in going through a heatset press. The heat resistance or refractoriness of a paper determines whether ink can be adequately dried, without scorching the sheet.

(d) **Chalking or Dusting Properties** of the coatings are important in the prevention of build-up on the printing plates, cooling rollers, folders, and other equipment on the press. Extremely poor running conditions can exist when supercalender "scale," chalking or dusting occurs.

(e) **Adequate Pick Resistance** is a factor of increasing importance with the demand for higher gloss printing. Higher gloss printing necessitates the use of stiffer and tackier inks. These require higher pick resistance. The trend to large solid areas imposes an increasingly severe demand on the pick resistance of paper.

(f) **Good Register from Roll to Roll**—Rolls wound well enough so that it will be reasonably possible to unwind the roll with even tension between press sections is necessary, in order

that in multi-color printing the relative position of the succeeding colors on the paper produces a clear sharp single imaged print. This is called "good register" and is a necessity for high speed quality printing. Loss can occur in quality and in spoilage when register is not held between rolls. Cases where a loss of 50 to 100 books occurs may be frequent, and on many rolls 20 or 30 signatures are lost at the roll change.

(g) **Splices Must Be Reliable**. If glue is used there should be none at the edge—in any case the splice should not "slip" in the heater section of the press. When smooth splices, such as those made with the new pressure sensitive tape are used, the loss of printed signatures between rolls can be eliminated. Good splices cut down on losses in quality and spoilage.

(h) **Shrink in Cross Direction** can cause difficulty when it is variable. We are not aware of the causes, but some lightweight machine coated stocks may shrink as much as 3/16 in. more than other stocks in a web 50 in. wide. Given a fixed roll size it becomes impossible to run a form unless it is known when such shrinkage will occur. There are cases where the shrinkage after the first heating is variable, causing difficulty in printing the second side of the paper.

(i) **Dispersibility of the paper**, including splices, is desirable, in order that the printer's waste may be reusable by the paper mills as pulp furnish. It is important, in order that printers can move waste promptly from their premises, that their waste be free of objectionable matter.

(j) **Tensile at the fold**—The folding properties of coated stocks play an important role in the "runnability" of paper at both press folder and in the subsequent bindery operations. In particular, letterpress stocks for high speed printing require that there be no splitting at the "backbone" (or fold), at the press folders. Depending on the layout and press design, this requirement for adequate "foldability" may be either in machine direction or cross machine direction. The heavier cover stocks such as that of 80 lb., 90 lb., 100 lb. (25 in. x 38 in.—500 sheets) can be particularly difficult to fold.

The most stringent condition for foldability is imposed in multicolor heatset letterpress work. The coated web of paper is here subjected to the heat shock from the heaters radiating at 2000 to 2500°F. This high heat can cause the paper web to rise to approximately 425°F. in less than one second. The paper is then cooled prior to being printed a second time and subjected again to this severe heating and cooling action. While the mineral

coated sheet is practically devoid of moisture, the printed paper is folded into "signatures." The initial experiences on coated stocks folded after heatset printing were very sad indeed. Covers and body stocks split frequently at the press folders and in binding operations. Covers of magazines cracked at the backbone, and fell off in the mails. The lighter body stocks split at the backbones and loose pages fell out.

Minimum standards for paper stocks had to be developed, and it was soon realized that ordinary tensile tests and Schopper or M.I.T. fold tests did not predict the splitting properties of machine-coated stocks. The research department at R. R. Donnelley developed the tensile at the fold test to give an indication of the tensile pull required to rupture the fold. The method as modified by West Virginia Pulp and Paper Co. is illustrated. (See illustration of "Hot Fold Tensile Tester" with explanation.)

2. Capabilities of Paper to Reproduce Art Copy

Among the virtues of coated papers is that they reproduce fine screen material well. It is now required that the coated stock:

(a) Reproduce the art copy with sufficient fidelity to be acceptable to the magazine or catalog as a true copy of the original.

(b) The inked areas should have the "gloss" desired in order that subjects "stand out" to give the sheen required by the purchases of printed matter.

(c) The overall combination of smoothness of tones, or fidelity with desired gloss must be maintained with reasonable consistency throughout long press runs. The need for uniformity has been stressed in the past many times. Stiffening competition between advertising media demands that the uniform high quality be obtained at low delivered cost despite increasing costs for labor. This means a continual race for higher press speeds and greater net production per unit time.

As an example of the cost of uniformity between successive rolls for coated catalog stock it was found that of two shipments, each of 45 lb. coated stock of acceptable quality, one resulted in net production per shift that was as much as 100% higher than the other. Catalogs must show articles being sold in the exact shade of the merchandise being offered. In this case, one shipment of paper varied slightly in absorbency, but this variation was sufficient to require ink adjustments, and other press adjustments, to be made between many of

the rolls. When paper from a second, slightly more uniform lot was inserted, press efficiency doubled with no change in press speed.

These demands for quality printing at high speed have led us to develop concepts about some of our requirements for coated stocks. These led to tests that permit differentiation, and to some extent, prediction, between papers that behave differently when printed letterpress. The Donnelley-Hull tests, particularly the wipe tests, flexible and rigid blade drawdowns, are especially useful examples of application will be given in this paper. The use of systematic jury panel evaluation of printed signatures is particularly helpful for rating process changes and routine manufacturing changes in coated stocks. Determination of "impression tolerance" requirements has been made by press trials and by laboratory methods. The most recent impression tolerance test developed by Kenneth Strachan of R. R. Donnelley & Sons will be described.

(d) The Donnelley-Hull red wipe test. The most common form of variation in coated papers has been found to be observable by this test or variations thereof. It is similar in principle to the K & N test. However, the ink used, particularly formulated by the author, H. H. Hull, has come closer to predicting the action of heatset inks on coated stocks. There are three reasons why the red wipe test has come closer to evaluating the absorption properties of coated stock for heatset printing than has the K & N test:

(1) The vehicle in the red wipe test is closer to the heatset vehicle, being a petroleum fraction, polybutene, rather than a vegetable oil (glyceride-castor oil). It is a step closer to actual printing conditions.

(2) Red was selected as being more readily visible to the eye. It also shows pattern better because the vehicle is more viscous—does not penetrate as quickly, therefore shows up irregularities with greater definition.

(3) Since the red wipe penetrates so much more slowly it is a particularly sensitive test of the surface. The K & N ink penetrates the entire body of the stock so rapidly that the pattern is obscured.

Total absorption shows up equally well on the K & N and on the red wipe test. The penetration through the sheet shows up more quickly on the K & N, but the red wipe is believed to be more representative of heatset conditions in this respect.

The red wipe test is particularly useful because it is primarily a test of the coated surface as contrasted to the body stock and as such, the tests on the two sides of the paper is gen-

erally different. As a test of the surface it can be used to note amount of absorptivity, "mottle" or surface pattern that can cause mottle in actual printing.

The red wipe test measures the small variations in coated paper quality that occur from roll to roll and across rolls that have important effects on printing quality.

The red smear test is useful in indicating desirable printing qualities in two other ways:

1. The gloss of the ink on the surface gives an indication of how well the ink will "hold out" on heatset letterpress.

2. The degree of strike-through of the red ink is a guide to the number and kind of defects that may occur in printing.

Numerical measurements of red smear tests have been made in several ways to indicate overall absorbency of coated stocks, neglecting mottle and defects. This has been done by reflection-meter measurements on the G.E. Recording Spectrophotometer and the Welsh Densichron.

One of our supplier mills has applied TAPPI's method for evaluation of K & N tests using a brightness test on the red wipe.

Modifications of the red wipe test have been made to emphasize particular characteristics. In particular, it has been easier to make numerical measurements with black inks for both absorbency and mottle.

Kimberly-Clark Corp. has developed a method for numerical evaluation of mottle with a black wipe ink similar to red. The ink used is diluted with thinner for ease of application in larger areas. The mottle is measured numerically by scanning with a photocell the areas darker than the average. The principle used is similar to the electron dirt counter. Scanned samples are used as standards.

(e) The Donnelley-Hull drawdown tests. The rigid blade drawdown gives a measure of gross variations such as those in the base sheet. The differences shown up by this test are just a little smaller than can be comfortably measured on a caliper—variations in thickness in the order of ten-thousandths of an inch or fractions thereof. Paper formation and caliper uniformity play large roles in determining what is a "good" rigid blade drawdown as contrasted to a "poor" drawdown.

(f) Impression tolerance requirements for coated stocks. In the same nominal coated grades there are very large differences in performance. As stated earlier in Part 1, for "runnability," as printers we need a paper that will not require constantly differing pressure to print, and one that

can print well over a wide pressure range.

How can this quality be defined? The pressure used to print depends on "impression," that is, the thickness of packings used. Impression itself is merely the displacement produced when paper is compressed between printing plate and "impression cylinder." Ideally, a paper should be sufficiently smooth to contact all areas of a plate with a minimum of compression, to produce an "ideal kiss impression." To date we know of no way to determine this compressibility factor in a manner that correlates with our press experience, and we know of no "absolutely smooth" surface. It then becomes desirable for us to measure the overall quality we call "impression tolerance."

The production press is the ultimate test. We use it for evaluation of impression tolerance.

Kenneth Strachan has developed a laboratory method for laboratory evaluation of this property in order that paper mills and we may have a valid rating for this property without long tedious and expensive press tests. We also use the I.G.T. print tester and the glass plate techniques.

Impression Tolerance . . .

It is well known that less than "minimum firm impression" results in broken tone and solid areas. Also that excessive impression causes rough tones. Somewhere in between lies the optimum impression for best printing. It would be desirable to print at the minimum point, but in practice the pressman must exceed this minimum value slightly to allow for packing deformations and variations in paper caliper, etc. It has also been observed that some papers can consistently be printed with less impression without tone breaking. This shows up in improved "trapping" of successive layers of ink, smoothness of tone, lower plate breakage, and reduced packing indentation, hence longer continuous runs.

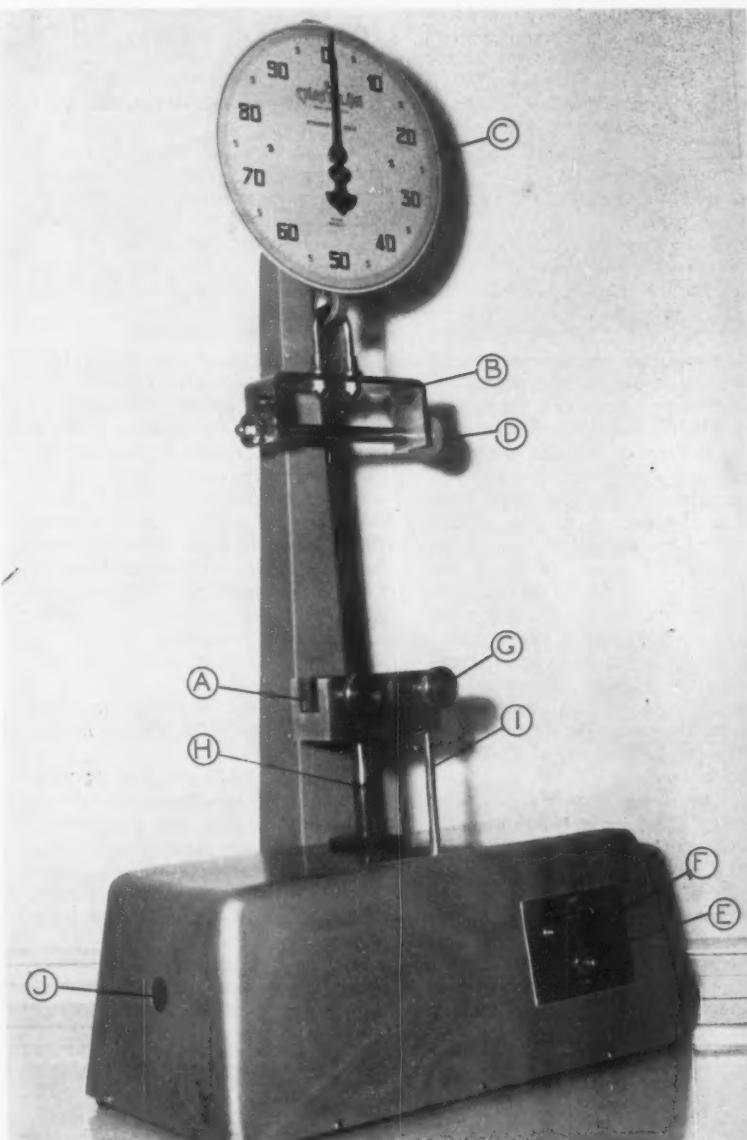
The range from "minimum firm impression" to excessive impression can be called "impression tolerance."

By production press testing, the "minimum impression required to print" can be determined comparatively for a group of papers in terms of packing thicknesses. For example, three papers were compared by this method and it was found that paper "A" required .001 in. more impression to print than "B," and .0015 in. more impression than "C." Paper "A" had long been known for its poor "impression tolerance."

In our laboratory, a method has been developed specifically for measuring "minimum impression to print" based on laboratory proof press tech-

niques previously reported by Carlson, Pihl, et. al.; Larocque; Fetko and Walker; and other methods we have devised in our laboratory.

In the Strachan method the paper is printed on a "Vandercrook No. 4" proof press under standard conditions of ink film thickness and ink consist-



"Hot Fold Tensile Tester" . . .

Also called LRL Cover Stock Tensile Tester, designed by Luke Research Engineering Dept., West Virginia Pulp and Paper Co., based on a Tensile at Fold Test developed by R. R. Donnelley & Sons. "Most stringent condition for foldability is imposed in multicolor heatset letterpress work," says the author.

This tester ascertains ability of cover stock to retain specific tensile strength at a fold point after being heated 5 to 10 min. at 360°F. in forced draft oven, simulating effect of heatset drying.

A—Motor drives this lower paper gripping clamp through set of spur gears to lead screw giving pulling rate of 4 in. per min. B—Upper paper clamp is attached to C—dial reading scale, and is fitted with slotted shaft for inserting paper sample. D—Knurled hand grip for pulling paper taut. E—Three position switch operates drive motor, running clamp up or down or turning off. F—3-amp. fuse with red indicator light that glows when in operation. G—Two thumb screws keep vertical edge of paper as plumb as possible when inserted in bottom clamp. Then, pointer is moved to zero on dial, other end of sample is inserted in top clamp and ratchet stop hand grip is turned till scale reads 10 lb., taking care to keep sample straight. Then operating switch is thrown to down position and lbs. required to pull sample apart observed. Break causes clang in dial. H, I and J are oiling locations for screw jack threads, guide rod and drive motor, respectively.

ency, and printing rate. The press has been equipped with power drive, temperature control for the printing plate, optical means for ink film thickness, and a pressure sensitive base supporting a precision solid printing plate. No packing is used. Pressures are read on a cathode ray-oscilloscope at the moment of impression and are expressed as pounds per inch of printing line. Successive proofs are pulled with different impressions and the minimum pressure giving complete coverage is the "minimum impression required to print."

With 3 grams per square meter ink on the plate and at 145 fpm printing rate, paper "A" required 490 lbs. per in. of printing line, paper "C" required 340 lbs. The test is reproducible and can be used to predict impression needed to print paper.

(g) Surface roughness measurement. The development of impression tolerance tests has not diminished our interest in surface roughness as a factor in printing. We have been interested in Chapman smoothness and are attempting to evaluate the usefulness of this test for coated stocks. In the particular case of the 73 rolls successfully differentiated by the red wipe test, we were unable to detect differences by Chapman smoothness. However, we are hopeful of determining larger differences than the narrow range in this particular shipment.

Through the facilities of Kimberly-Clark, we have evaluated roughness as a factor in printing on a particular press test. This press test was made to evaluate the gain made by a mill after they made a major machine change; a comparison was made of the new and old papers as well as the four competitive grades.

The six papers were run and rated as follows by jury panels of ourselves as printers, by our customer, and by

our supplier's research division and sales division.

The ratings agreed to were as follows:

1. Mill A conversion grade
2. Mill B machine coat grade 75 lb. basis weight (25 x 38 in.)
3. Mill C machine coat 70 lb.
4. Mill A experimental paper
5. The new paper—68 lb. mill A
6. The old paper—68 lb. mill A.

The basis of the ratings of overall acceptability is a composite of many factors with particular emphasis on fidelity of reproduction (smoothness of tone) and gloss of printed areas.

These samples were rated by the various observers. It was agreed that the data showed:

1. That paper 1 was best.
2. That papers 2 and 3 were in a class below 1, and above 5 or 6.

There were definite differences of opinion about the printing on paper 4 because while it printed smoothly, the inks lost their gloss.

These samples were tested on a brush surface analyzer by Kimberly-Clark Research. Prior to testing however, Kimberly-Clark Research stated that there were three factors of importance to bear in mind in interpreting the brush data when received.

1. The number of depressions 150 microinches or deeper.
2. The per cent of surface area that is at, or below, 150 microinches in depth.
3. Whether the felt side or wire side is being measured. Experience has indicated that the composition two sidedness of paper is such that even with equal measured roughness the wire side will print poorer due to its lower content of the fine pulp fraction.

Of the six papers, three were printed wire side up, three felt side up.



Donnelley "Drawdown" Procedure . . .

Dark areas in treated patch of paper represent depressions in paper thickness, such as might be typified by formation "clumps." Differences shown up are a little smaller than can be comfortably measured on a caliper.

It is evident that the surface roughness factor as measured by Kimberly-Clark's brush surface analyzer yields data which is in agreement with our press results insofar as smoothness of tone or fidelity of reproduction is concerned.

In the case of the experimental paper No. 4 it was evident that this process produced a somewhat smoother paper than by their regular process, but that due to some other factor such as ink hold-out and/or gloss, the overall printed result was not satisfactory, being too "flat" in appearance.

(h) High gloss—This paper discusses primarily the systematic evaluation that we are thinking about in our organization, and utilizing to some extent to determine the properties important in printing. These were primarily concerned with absorption of ink properties, surface defects that affect printing, impression tolerance, and the roughness factor. However, gloss, as such, in itself is an important property in determining printing acceptability. Large variations in this property are not acceptable. Two Points Ingersoll Gloss constitute a variation that is not acceptable across the width of a roll. One Point Ingersoll Gloss is as large a variation from roll to roll, as can be tolerated in regular production.

In general, it is preferable to have a higher gloss sheet for printing up to the point where calender blackening occurs, and the paper is not readily "wettable" by the inks. This phenomenon of wettability or surface receptivity of the ink is a very important factor in itself which we are not able to define precisely.

3. Appearance and "Feel" Requirements

Among the desirable qualities of coated stocks are the glossy white appearance and the generally smooth feel of luxury and quality of these papers. However, these qualities are subject to rough treatment in letterpress printing, particularly heatset.

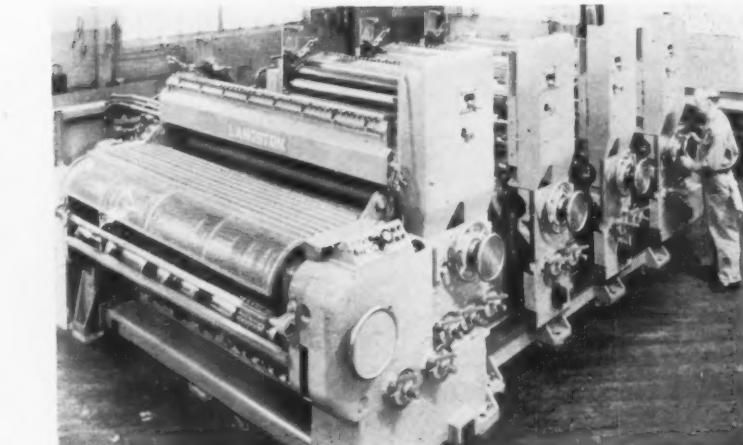
(a) Smooth appearance and feel can be destroyed by excessive impression. Excessive impression may be used on papers lacking impression tolerance resulting in embossing. This embossing comes about in an attempt to print a poorly printable sheet, yet is unsightly and objectionable.

(b) The glossy bright appearance can be destroyed by heater wrinkles, where areas of the paper may be "scorched" locally below 60% brightness. In the extreme, whole areas may be browned by the necessity of drying inks. Where a compromise is made, there may be some smeared areas where ink has not dried sufficiently,

while other areas may be darkened considerably.

(c) The folding properties of coated papers as related to strength at the press and in the bindery have been discussed. Often papers with sufficient strength at a fold lack adequate "appearance." Unsightly "coating cracks" occur that are so severe as to make it unwise to print in areas that will be subsequently folded. This occurs most frequently in cross machine direction and can be an important factor in determining whether to use the weaker machine direction fold that has the better appearance. This factor in itself may decide what particular paper stock will be used for the job.

(d) Show-through is increasingly important as the basis weight of coated papers is constantly being lowered. Bausch and Lomb opacity in the region of 90 to 92% indicates that attention is required in evaluating the show-through with ink on the paper. Excessive absorbency of the paper in the range below 92% can often be seen by examining the reverse side of either the red wipe test or by drawdown tests for show-through. We as printers stress show-through as the important criterion rather than opacity, which considers the transparency of the pa-



Langston's Multi-color Printer-Slotter in Open Position

per before the ink has been applied.

(e) Caliper is important to the extent that one cannot get the feel of quality and luxury from a thin transparent sheet. Bulk is needed. The requirement for bulk is being made at the same time as basis weight is being reduced, and high finish is being acquired, and thus high supercalendering is being requested.

New Printer-Slotter Shown to Industry

Exuberance best describes reaction of some 30 box makers who have previewed the new printer-sлоттер of the Samuel M. Langston Co.

Bryant M. Langston, president, told his engineers to forget all previous concepts of printer-sлоттерs and to design a machine combining maximum ease and rapidity of setup with maximum flexibility of printing.

The completely new design is of split or opening construction, arranged so that a two-color press can easily have three, four or more colors added at a later date.

Each printing section and the slitting and scoring station is a self-contained unit with its own drive. The machine is power opened and closed, with automatic power-operated self-tightening, locking and unlocking devices.

Safety devices protect the operator while he stands between press sections during set-up.

A selector switch provides the means, in one position, to unlock (hydraulically) and open the machine automatically to equal preset distances between sections.

A splined shaft runs parallel to the sliding ways. Each section, (slitting, printing and feeding) is driven individually from this common shaft. The beauty of the splined shaft, explains Ed Seeger, vice president i/c sales, is that other units can be added.

It is said that set-up time is about 50% less than conventional presses. This reduction in set-up time will be priceless to the small printer, stresses Mr. Seeger. "This machine will produce more even though it won't run faster, because you can change from one order to another faster. This enormous flexibility in printing will be a big advantage," he said.

Progress Report on Dierks Mill

Aug. 15 is the target date for the new Dierks Paper Co. mill at Pine Bluff, Ark., but, of course, all mill target dates in these years must be tentative. Multiwall bag paper, top grades of kraft, gumming paper and board will be products of the 168-in. Black-Clawson Fourdrinier machine.

Carl Plumlee, formerly of Macon Kraft and Bauer Bros. Co., who is general supt., is building up his staff. Richard Talley is the new pulp supt. He was pulp supt. at Georgia Kraft (formerly Macon Kraft). He is from Louisiana originally, attended Southeastern La. College.

Plant engineer for Dierks is Roger Richey, from the Mead mill at Harriman, Tenn. He is a Univ. of Illinois graduate.



CARL PLUMLEE—general supt. of new Dierks paper Co. mill scheduled for Aug. start-up at Pine Bluff, Ark.

Dierks Forests, Inc., the parent firm, has 1,900,000 acres of timber in Arkansas and Oklahoma, managed by a staff of 40 trained foresters, with a fleet of radio-equipped cars. There will be lots of virgin timber used. Dierks has four sawmills, a wood-treating plant and owns a railroad.

Fred H. Dierks, Kansas City, Mo., is president of both the parent company and Dierks Paper Co. His son, Fred M. Dierks, is vice president of both. Frank M. Johnson is sales manager for the paper firm, with offices at 810 Whittington Ave., Hot Springs, Ark.

Equipment being made for the pulp and paper mill includes:

Combustion Engineering recovery boiler for 150 ton mill.

Erie City power boiler to burn gas, also oil.

Goslin-Birmingham evaporators.

Bauer Centri-Cleaners—10 primary, two secondary, one tertiary.

Five Emerson No. 6 jordans for refining.

Dorr-Oliver causticising.

Improved Machinery washers and screens.

Westinghouse flat belt line shaft drive and turbine for paper machine.

Chicago Bridge mild carbon steel stationary digesters.

PICTURES OF PEOPLE IN THE NEWS

Safest Year Ever

Puget Sound Pulp & Timber Co. has steadily improved its safety record over 13 years, as shown by shorter black bars on chart. The Bellingham, Wash., mill in first 11 months (1956) had frequency rate of 2.29. Since 1944, accident rate tumbled some 75 points. Shown here presenting department safety plaque to Yard Crew Foreman CARL PAULSEN, extreme left, is ERIC ERICSSON, general supt. At left are LAWSON TURCOTTE, president, and ERIK EK-HOLM, vice president.



Seven "Safe" Years for K-C Neenah Paper Div.

Maintenance employees of Neenah Paper Co. div. of Kimberly-Clark Corp. were honored recently for completing seven straight years without a lost-time injury, from Feb. 21, 1950. Taking part in the ceremony were (l to r) ROBERT CHRISTENSEN, electrical foreman, LEO O. SCHUBART, pres. of Neenah Paper, EARL AUSTIN SR., millwrights lead man, KAI SCHUBART, plant engineer, and ALAN ADRIAN, operations mgr.

In West Coast News

EDWARD H. WALTHERS (left) is new mgr., distributor sales div., Crown Zellerbach Corp., San Francisco, succeeding G. S. Runyan who became vice pres. for general paper sales. Mr. Walther has been with the firm for 22 years.

LEO S. BURDON (right), asst. vice pres., Scott Paper Co., Everett, Wash., has retired after over 40 years in the industry. He joined Soundview Pulp Co. in 1934, was named asst. v.p. following the merger with Scott in 1951. He was recently honored at a dinner by his many friends at Everett and received a scroll summarizing his record of service and accomplishment.



Groundwood Mill Wins Shield Again

C. T. CLARK, mill manager, Fraser Companies, Edmundston, N.B., is shown here presenting the mill manager's safety shield to H. G. LARLEE, supt. of groundwood pulp mill, in recognition of the latter's winning the best safety record last year in the company's Edmundston mills. Others present at the ceremony are C. J. CORBETT, personnel and safety officer; CLARKE CAMPBELL, asst. groundwood supt., and D. A. McALERY, supervisor of industrial relations. The mill manager's shield is presented each year to the department having the least number of accidents per man-hours worked. It was first presented for the year 1947. This is the fourth time that the groundwood mill has won the shield. There hasn't been a lost time accident in that mill since August 20, 1951, a period covering well over 536,000 man-hours.

New Pres. and a First V.P.

CHARLES F. CHAPLIN (left) has been elected president and director of sales, Allied Paper Corp., succeeding Henry C. Buckingham, who will become a consultant to the firm. Mr. Chaplin was formerly vice pres. and sales mgr. NORMAN I. BEARSE (right), vice pres. of production, moves up to first vice pres. of Champion-International Co., Pres. Kurtz M. Hanson announced. Mr. Bearse joined the firm as tech. director in 1936, became vice pres. and director in 1950.

Does the work of two conventional refiners

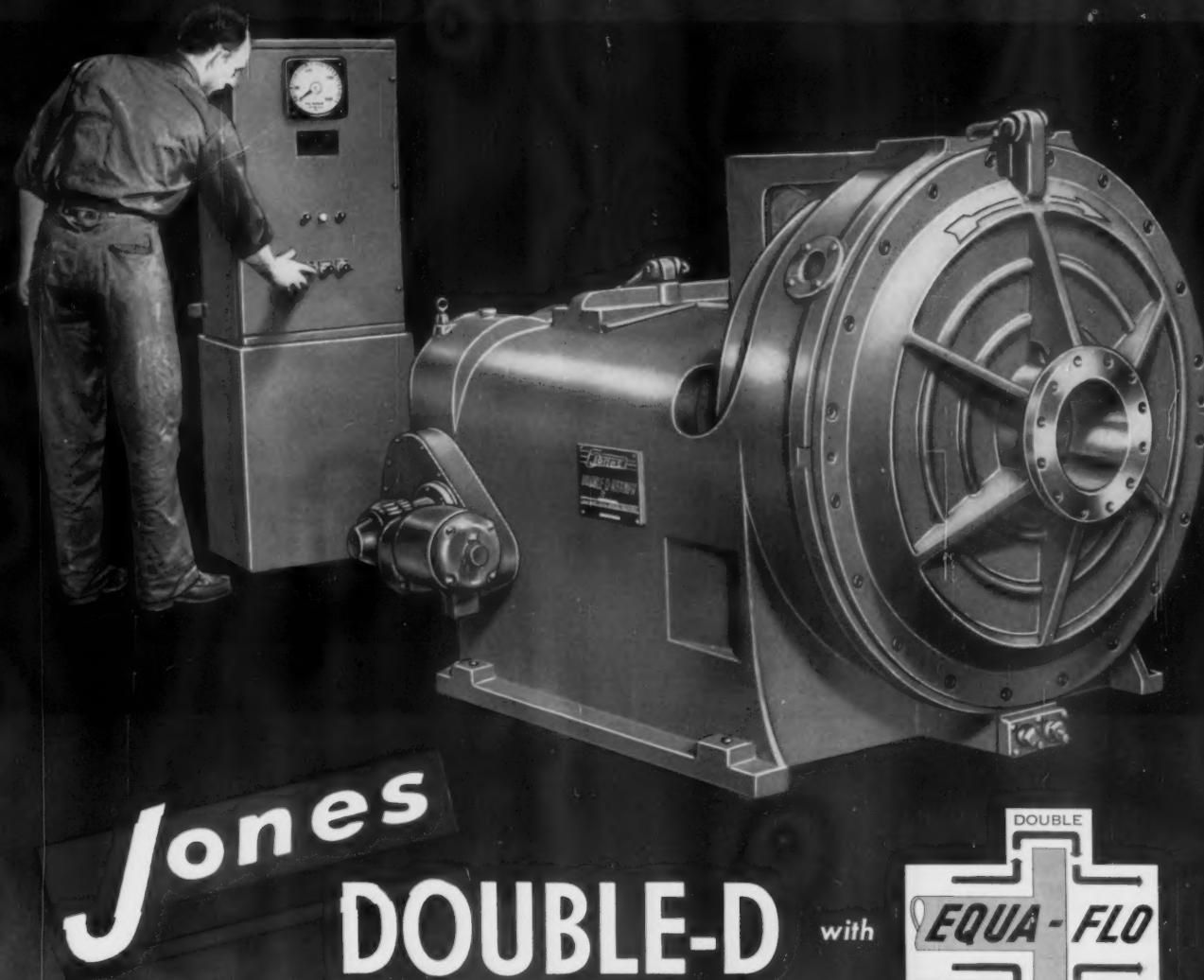
The record of the Jones Double-D Refiner has been proved for nearly two years in several large southern mills — and backed up by more recent experience in a number of other mills, some of which have already re-ordered Double-D's. (More than 50 sold to date.)

Not only does the Double-D's double refining area do twice the work of conventional refiners, but users report that it produces stock of equal or

better quality than similar machines, at a considerable saving in operating cost.

This performance record of the Double-D has proved the accuracy of experimental forecasts. Fully pressurized, compact and easy to install and maintain, the Double-D effects substantial savings in time, horsepower and floor space.

Ask your Jones representative for details or write direct for Bulletin EDJ-1083.



E. D. JONES & SONS COMPANY

Pittsfield, Massachusetts

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

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Export Agents: CASTLE & OVERTON, INC., NEW YORK 20, N.Y.

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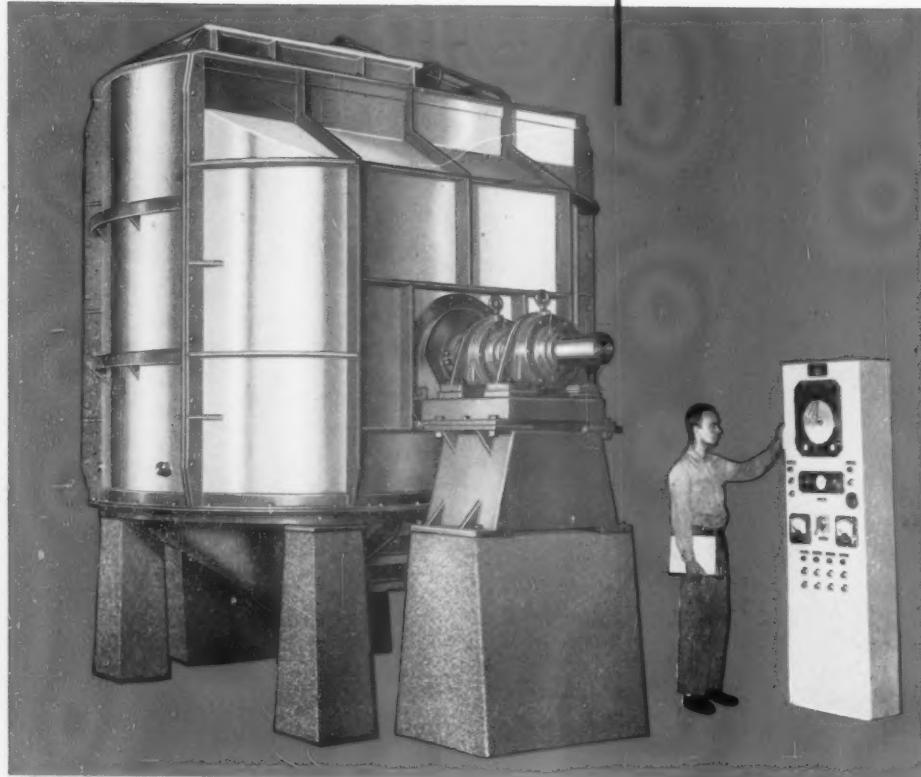
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Jones

HI-LO PULPER

Combines

faster pulping
complete defibering
with greater power economy



BROKEMASTER — the Hi-Lo principle adapted to handling dry broke directly off the machine, on a continuous or batch basis — with completely automatic controls requiring no operating manpower. Hi-Lo rotors can be installed in existing tanks, or in an installation custom engineered to fit your requirements and the space available.

The HI-LO Pulper utilizes two *separately-powered rotors* . . . a large-vaned Lo-Speed one for fast initial break-up and thorough circulation; a Hi-Speed one with small hardened inserts for complete defibering, all in minimum time and without exorbitant use of power.

The result is to avoid the compromise, necessary in a

single-rotor pulper, between adequate speed and economical use of power, between maximum circulation and efficient defibering. In actual mill operation this has produced savings of 25% in HP/Ton, and 33% in pulping time. Ask your Jones representative for details or write for Bulletin EDJ-1063.

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SIMPLE TO INSTALL, EASY TO CLEAN AND NO GAP AT THE LAP

ESCO Digester Strainers may be attached with ESCO Wedge-type Lugs or bolts for easy cleaning changing. ESCO lap joints means a cleaner circulating system.

ESCO Cast Digester Strainers are available in the high alloy steels best suited to your corrosion problem. Strainer screens are also available cast in matching alloys.

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Corrosion-Resistant

LININGS and TILE TANKS



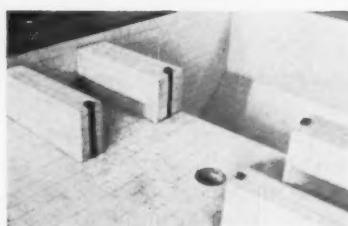
TILE LININGS

HETILE, highly resistant to corrosion, impact and abrasion, can be laid with full corrosion-resistant joint, then bonded to vessel. For chlorinators, reactors, towers, high-temperature tanks, etc. SEMPLATE is used for concrete or steel surfaces — tanks, pits, sewers, flumes, etc.



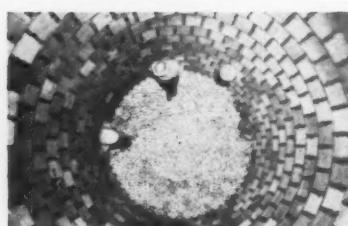
TILE SILOS

Silos for storage of dry solids are built of SEMTILE or SEMBLOK, or combinations of the two, depending upon the size, location and physical characteristics of the material. Material-handling equipment may be carried on the reinforced tile structure.



WHITE TILE LININGS

Specially developed for low-temperature, mild-service conditions where clearances are small and maximum capacity must be retained. Neat, easy to keep clean. Special Swedish tile for heavy-duty service. For couch and wire pits, beaters, stock chests, dye becks, etc.



ACID BRICK LININGS

SEMCO and SEMAC Brick are used in vessels subject to severe corrosive effects. High chemical resistance plus superior thermal spall resistance. For digesters, acid accumulators, acid tanks, chlorine dioxide reactors, bleachers, blow pits and primary coolers. Carbon Brick, Fire Brick and Insulating Brick also used as required.



MEMBRANE LININGS

Stebbins installs membrane linings, protected by tile or brick, to meet special chemical conditions beyond the protective limits of the brick or tile itself. Complete shop facilities and field crews are available for application of a complete range of sheet and liquid membrane materials.



STOCK AND SLURRY TANKS

Stebbins storage tanks are, in effect, reinforced concrete faced inside and out with vitrified tile. Wide variety of contours and sizes. Walls are designed to carry the fully hydrostatic head in accordance with accepted concrete design. High-density storage tanks, machine chests, clay slurry chests, etc.

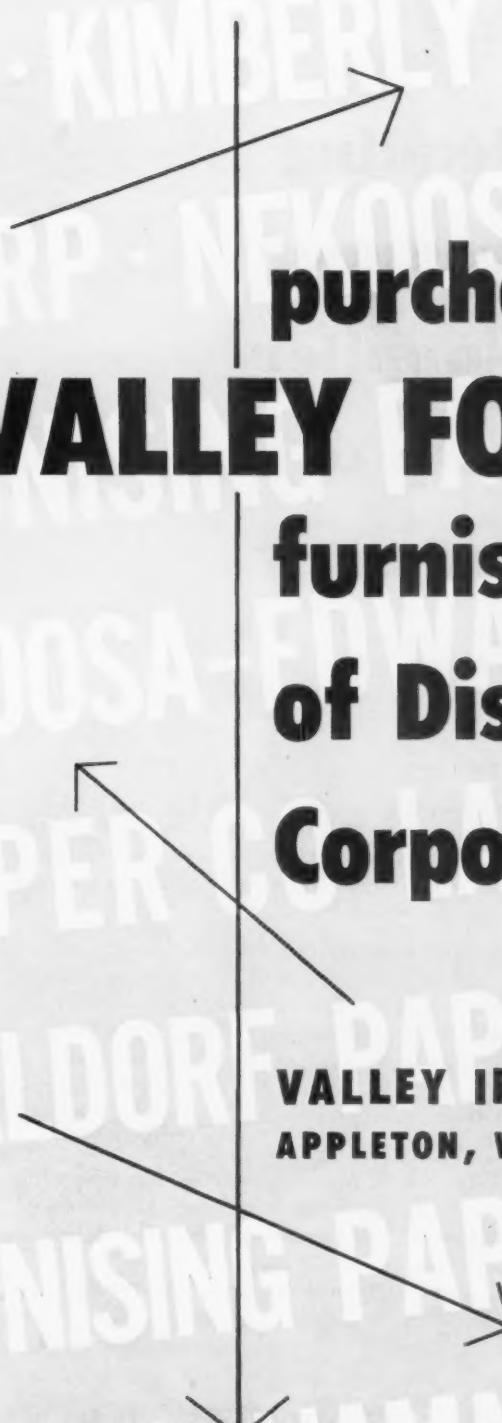
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furnish a background
of Distinguished
Corporate Names

VALLEY IRON WORKS COMPANY
APPLETON, WISCONSIN

*A message to papermakers from
M. A. Brown, general sales manager, Rayonier Incorporated*

Why this leading cellulose producer is a major supplier of wood pulp to the paper industry

*Here are five solid reasons why Rayonier
makes this statement a matter of corporate policy*

1. New and Enlarged Production Facilities. When the first unit of our new Jesup, Georgia, Division came on stream in 1954, Rayonier became firmly entrenched as a major market supplier of quality bleached wood pulps to the paper industry. This position will be further fortified in 1957 when our second 100,000 ton capacity mill at Jesup comes into production. Additional expansion activity at six other divisions reaffirms our position.

2. Three Major Production Areas. Now Rayonier offers both sulfite and sulfate pulps from three regions of North America: the Southeast for sulfate pulps; the Pacific Northwest and British Columbia for our sulfites. Such diversification and versatility assure customers of product and delivery reliability . . . plus an unusual degree of flexibility to meet their every demand.

3. Direct Sales. Our sales policy for bleached wood

pulps is direct manufacturer contact with our customers. Our own sales force calls on you. Overseas we employ locally appointed agents to serve the need of their specific sales areas.

4. Research and Technical Services. All our products are heavily supported with Rayonier on-the-spot technical services, in turn backed up by three advanced research divisions in the U.S.A. and Canada. This is additional assurance customers' requirements are exactly fulfilled . . . and that quality performance and all other benefits are derived from Rayonier wood pulps.

5. A Basic Raw Material Supplier. Rayonier's full line of wood pulps for papermaking is supplemented by the most complete line of chemical cellulose in the industry.

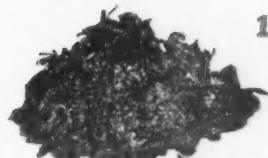
Above all, Rayonier is first a supplier of basic raw materials.

RAYONIER
INCORPORATED



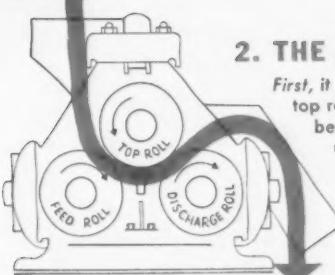
cellulose chemistry

Executive and General Sales Offices: 161 East 42nd Street, New York 17, N. Y.



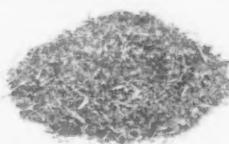
1. WET BARK

Containing 70% moisture, averaging only 5,582 BTU's per pound, flows into the hopper.



2. THE DOUBLE SQUEEZE

First, it is squeezed between the top roll and feed roll. Second, between the top roll and discharge roll. The combination of pressure and shredding (at two points) reduces wet bark to small, dry particles.



3. DRY FUEL

... with moisture as low as 47%... averaging 7,390 BTU's per pound.

Note, too, how large pieces are reduced to small particles... assuring more efficient combustion.

CONVERT WET BARK TO DRY FUEL with a **fulton roll press**



BURN YOUR WASTE!

Equally efficient for knots, tailings and other mill waste. A continuous, low-cost operation.

mail coupon now

FOR FULL DETAILS AND...

FREE TEST RUN OF MATERIALS YOU WANT TO PROCESS

AGENTS:

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E. V. PRENTICE COMPANY
2303 N. Randolph Avenue
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FULTON IRON WORKS CO.

U.P.T. PP-4
4235 DUNCAN AVE. • ST. LOUIS 10, MO.

WE ARE INTERESTED IN A FREE TEST RUN OF

NAME

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CITY ZONE STATE

*For overhead
stock and
process lines...*

**Specify Transite
Pressure Pipe for
these 3 basic
advantages...**

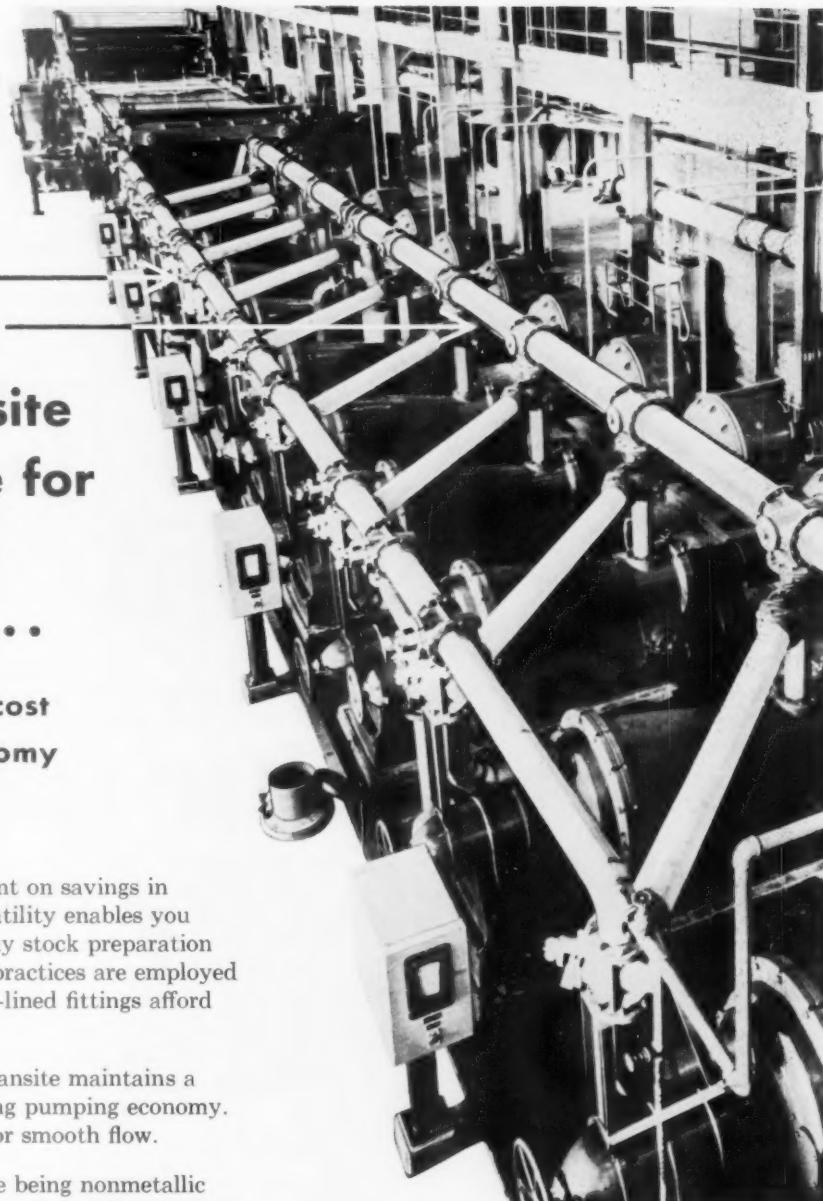
1. Low installed cost
2. Pumping economy
3. Clean lines

1. With Transite® you can count on savings in installed costs. Transite's versatility enables you to meet the requirements of any stock preparation system. Standard installation practices are employed and a wide variety of Transite-lined fittings afford complete flexibility of design.

2. Pumping costs are low. Transite maintains a smooth interior to assure lasting pumping economy. The joints, too, are designed for smooth flow.

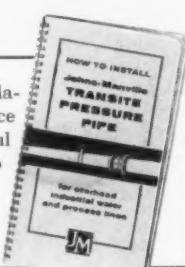
3. Keeps stock clean. Transite being nonmetallic will not rust. The joints also are designed so that no metal comes in contact with stock or solution. Thus water and process liquids can't pick up rust, impurities or unwanted color. For Transite (durable asbestos-cement) resists sliming and bacterial growth as well as corrosion. This cleanliness, characteristic of Transite, gives you an added advantage: minimum maintenance and cleaning costs.

Let us send you a copy of the new installation guide. Write to Johns-Manville, Box 14, New York 16, N.Y. In Canada, Port Credit, Ontario.

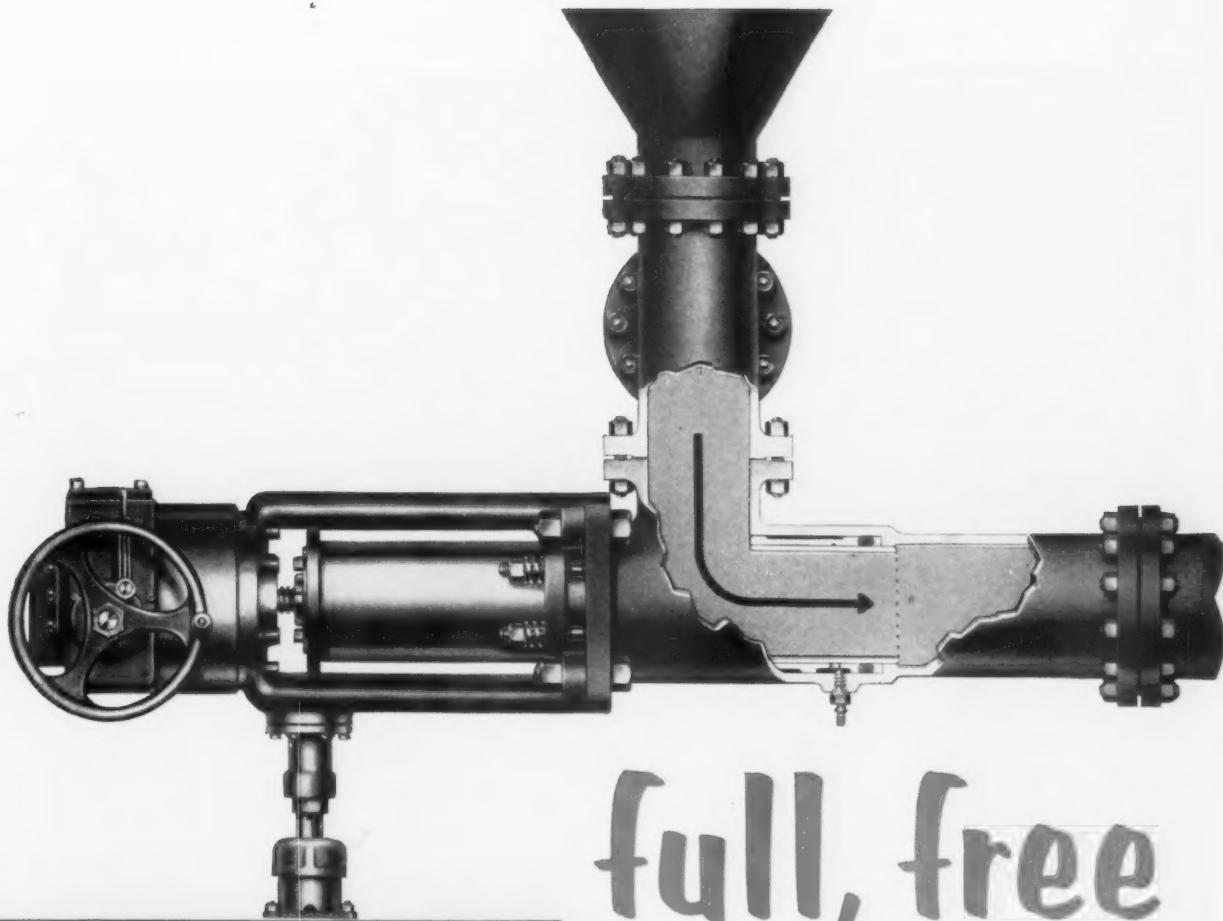


Transite stock preparation system
in a West Coast Kraft mill

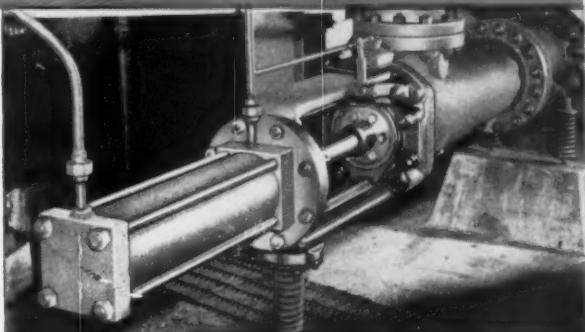
Free . . . New 48-page installation guide. On-job experience from hundreds of successful Transite installations to help you plan and erect the proper Transite Pressure Pipe System.



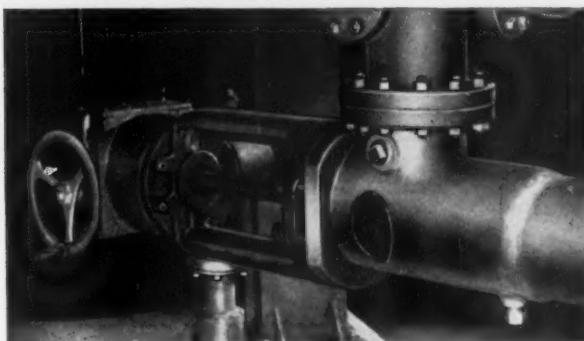
Johns-Manville TRANSITE PRESSURE PIPE
AN ASBESTOS-CEMENT PRODUCT



full, free digester discharge



HYDRAULIC-OPERATED Yarway Digester Blow Valve—one of six installed at large North Carolina paper mill.



MOTOR-OPERATED Yarway Digester Blow Valve—one of eight installed at large Canadian paper mill.

Digesters blow fast and clean with YARWAY Seatless Blow Valves.

The hollow sliding plunger has no pockets where wood chips or tramp materials can hang up.

All Yarway Digester Valves have full pipe area, permitting fast discharge with minimum pressure drop. Comparisons show more discharge area . . . reducing blowing time, increasing number of cooks.

Scores of pulp mills report lower operating costs and increased production due to YARWAY Digester Blow Valves. One large mill found savings in operation and maintenance the first year more than paid the cost of their 4 new Digester Valves!

YARWAY Seatless Digester Valves can be furnished either with electric motor or hydraulic cylinder units. Both are remote controlled. Bulletin B-441 gives the whole story. Write for it.

YARNALL-WARING COMPANY
103 Mermaid Avenue, Philadelphia 19, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES



• DIGESTER BLOW VALVES



Glidden white pigment is selling in super-markets!



No, a housewife cannot actually buy Glidden white pigment in her favorite store. But it's there, helping to sell her a variety of products!

Atlanta Paper Company uses Glidden Zopaque Titanium Dioxide to print its Bottle Master® and Cluster-Pak® carry-home cartons sparkling white before the product message is added. These brilliant-colored cartons stand

out, helping to build those extra, impulse sales and multiple-unit sales.

Glidden Zopaque Titanium Dioxide—the finest white pigment—gives greater whiteness not only to paper but paint, rubber, plastic, and ceramic products. If you would like to add extra sales appeal to your white products, write for complete details.



THE GLIDDEN COMPANY

Chemicals - Pigments - Metals Division

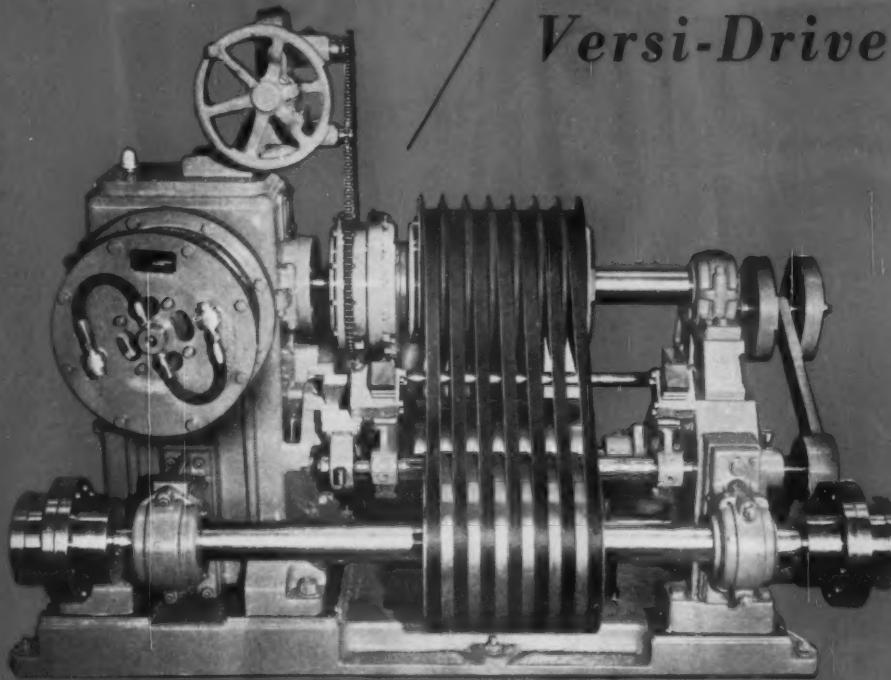
Baltimore, Maryland • Collinsville, Illinois • Hammond, Indiana • Scranton, Pa.



April 1957 — PULP & PAPER

MOORE & WHITE

Versi-Drive®



MODERN
VERSATILE
EFFICIENT
COMPACT
ACCESSIBLE
SAFE
DEPENDABLE
TROUBLE-FREE

Positive Power Transmission with Precision Draw Control

VERSI-DRIVE is versatile, reliable and instantly controlled. It provides precise draw control and synchronizes section speed to maintain uniform tension on the sheet at all times. Uniform caliper and the desired basic weight and finish are assured throughout the run, at any selected setting. VERSI-DRIVE is available in two sizes, to meet the requirements of most paper machines. It is engineered and built to exacting standards for maximum efficiency, compactness, accessibility and safety. Installation, operating and maintenance costs are low. For increased production from your present machines, a more uniform sheet, freedom from stoppages and downtime, it will pay you to get the full story of M.&W. VERSI-DRIVE. Write today for complete information.

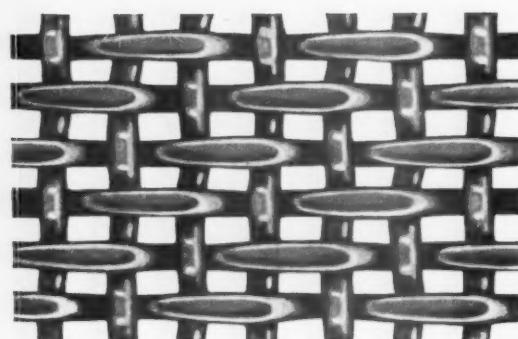


The MOORE & WHITE Company

330 East Hunting Park Ave., Philadelphia 24, Pa.
West Coast: Stephen Thurlow Co., 3701 W. Alaska St., Seattle 16, Wash.



-it always means the best

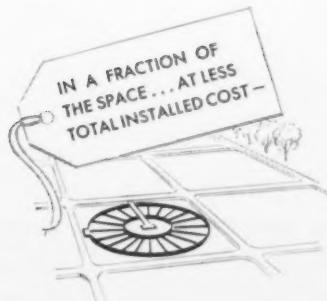


THE LINDSAY WIRE WEAVING COMPANY

CLEVELAND 10, OHIO

Whatever the field or line of endeavor,
specialization makes for superior results.
Always, since 1903, Lindsay's entire attention
and resources have been devoted to the
weaving of Fourdrinier wire cloth
for one purpose — the manufacture of
better paper and paper products.

Lindsay WIRES
FOR PAPER MILLS



you get HIGH performance...
at LOW cost...with INFILCO
water treatment equipment

ACCELERATOR®

high rate treatment plant
... saves up to 80% of space

Clarifies, or softens and stabilizes water in a single basin; replaces slow rate separate mixing, coagulation and sedimentation basins. Produces clearer, more stable effluent; "slurry contact", not "sludge blanket" unit.

Bulletin 1825



FILTERS

Complete equipment for gravity filters, including meters, rate controllers, control panels or operating tables. Design for your particular needs based on years of experience. Pressure filters, too, for plants of smaller capacity.
Request Information



CLARIFIERS

For simple clarification by sedimentation. Type WS for smaller diameters. Type BF for larger diameters. Three different types of surface skimmers available, depending on operating conditions.

Bulletin 6000



ACCELAPAK® TREATING PLANT

for producing potable water in plants or woodlands
Removes objectionable turbidity, organic matter, iron, taste, odor. Delivers purified and clarified water. Economical to operate.

Bulletin 1870



CYCLATOR® CLARIFIER

... saves valuable space
... recovers water and fibre
Clarifies white water and mill effluents by chemical and mechanical methods with solids recirculation in a single unit. Combines all functions in a single basin.

Bulletin 850



SEDFLOTOR® Saveall

Where space is limited and high-rate clarification a must, this air flotation unit is ideal for removing both floatable materials and settleable solids.

Bulletin 6051

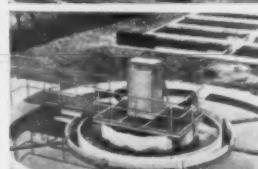


AERO-ACCELERATOR® (TRADE-MARK) TREATING PLANT

... a compact, efficient activated sludge plant

High-rate, multipurpose unit for B.O.D. reduction of mill effluent. Rapid, continuous biological oxidation and clarification, efficient and stable operation at high loads. Low installed cost.

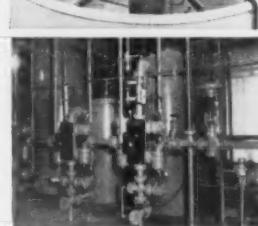
Bulletin 6510



BOILER FEED-WATER TREATING EQUIPMENT

A complete range of water treating plants custom engineered to meet your particular requirements. ACCELERATOR® clarifiers, ACCELERATOR® HOT-FLOW® Softeners, Zeolite Softeners and Demineralizers.

Request Information



Specially designed for pulp and paper needs

For pollution control, treatment of process water, and efficient recovery of process water and fibre with economical use of chemicals, minimum space and construction requirements — these are just a few of the advantages of INFILCO treatment equipment. It's the most complete line on the market, with many other units in addition to the typical examples illustrated above.

INFILCO engineers know how to help solve your problem with knowledge gained from many years of specialized experience in pulp and paper fields. Write today for bulletins of interest to you.

Inquiries are invited on all problems in the treatment of process and boiler feed water, and of waste water for the pulp and paper industry.

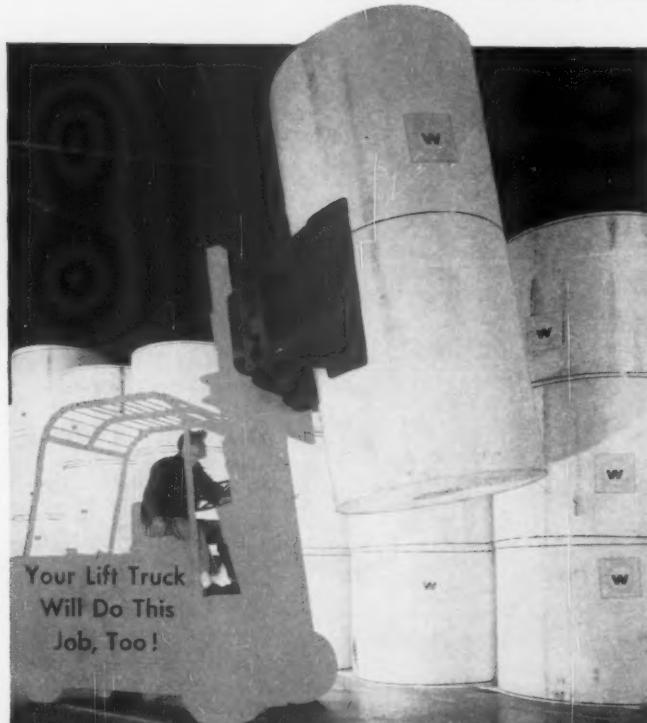


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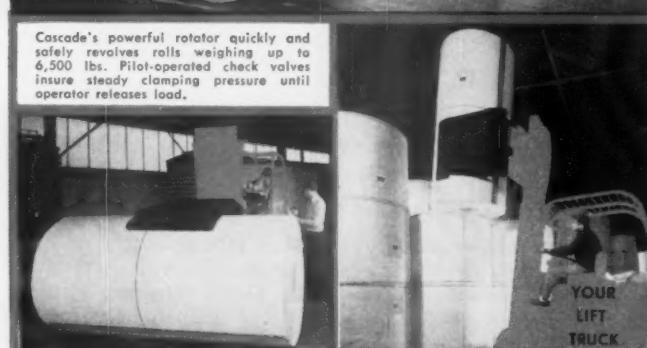
THE ONLY COMPANY impartially offering equipment for ALL types of water and waste conditioning — coagulation, precipitation, sedimentation, flotation, filtration, ion exchange and biological treatment.

Cascade

REVOLVING PAPER ROLL GRAB



Cascade's powerful rotator quickly and safely revolves rolls weighing up to 6,500 lbs. Pilot-operated check valves insure steady clamping pressure until operator releases load.



Driver confidence in Cascade Grabs pays dividends in lower handling costs.

Cascade's high torque permits off-center clamping and rotating of this 6,000 lb. roll for higher stacking.

ONLY THE CASCADE REVOLVING PAPER ROLL GRAB CAN GIVE YOU ALL THESE ADVANTAGES

- Highest Torque of Any Clamp Available.
- Speed of Rotation Precisely Controlled by Adjustable Hydraulic Fittings.
- Positive Clamping Pressure Insured by Pilot-operated Check Valves.
- No Manual Adjustment Required with Original Powered Swinging Arm.
- Rugged Construction, Replacement Parts Quickly Available, Easy to Service.
- Engineered to Adapt to Any Lift Truck.

Cuts Handling Costs for Weyerhaeuser

The Pulp Division, Weyerhaeuser Timber Company, Longview, Washington, reports it is extremely pleased with Cascade's new Revolving Paper Roll Grab. Cascade Roll Grabs offer real savings in man hours and actual dollars because of these advantages:

AUTOMATIC ADJUSTMENT FOR DIFFERENT ROLL SIZES — Drivers no longer dismount and position grab arm manually.

IMPROVED OPERATING EFFICIENCY — Rugged construction reduces down-time due to clamp failure.

SURE, NON-SLIP HANDLING OF HEAVY, HIGH-FINISH ROLLS — No more culled stock due to dropping. Costly reprocessing is eliminated. Wrapper damage is rare.

FAST OPERATION IN COMPLETE SAFETY — Driver confidence with the Cascade Roll Grab results in more rolls and more tons of paper handled per day.



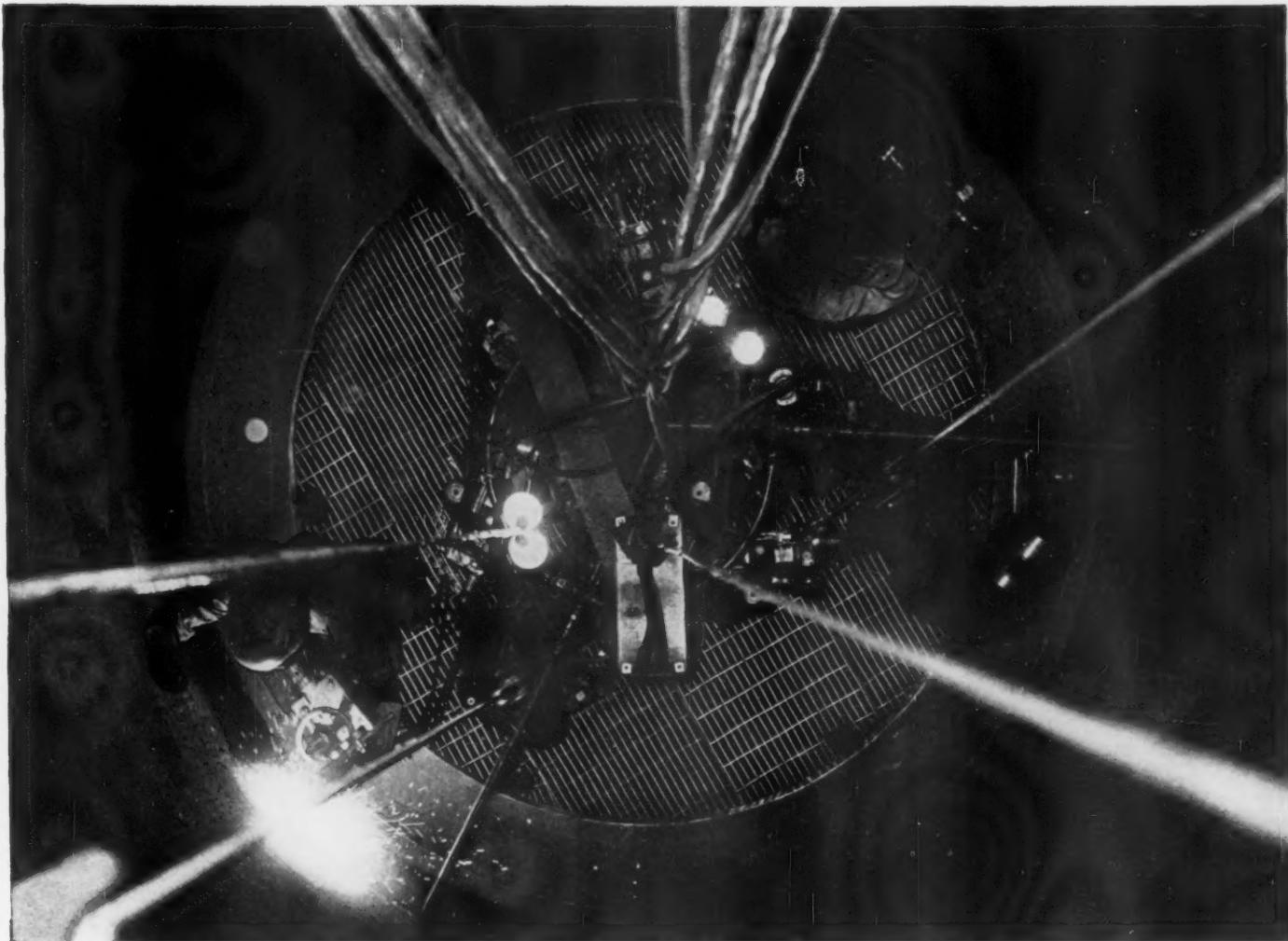
Made in 3 models: 2000 lb., 4000 lb., 6500 lb. Roll Capacities

Literature and information available through the following manufacturers and their dealers:

Allis-Chalmers Mfg. Co.	Lamson-Mobilift Corp.
Automatic Transportation Co.	Lewis-Shepard Products, Inc.
Baker-Roulong Co.	Mercury Mfg. Co.
Barrett-Crovens Co.	Moto-True Co.
Clark Equipment Co.	Raymond Corp.
Colson Corp.	Revolverator Co.
Elwell-Parker Electric Co.	Towmotor Corp.
Hyster Co.	Transitier Truck Co.
Knickerbocker Co.	Yale & Towne Mfg. Co.

CASCADE MANUFACTURING CO.

Manufacturers of
A Complete Line of Hydraulically Actuated Lift Truck Attachments



How This Stainless Overlay Was Made: $\frac{1}{16}$ " diameter Crucible stainless steel welding wire was applied automatically, by the inert gas consumable electrode process, to the entire inside surface of the digester. The finished lining

forms a protective coating $\frac{1}{8}$ " thick. Overlay was made by The Portland Co., Portland, Maine.

Stainless overlay stops corrosion of Kraft Digester—saves 2/3 cost of replacement

Corrosion and erosion were eating away the mild steel interior of this Kraft digester. Replacement was considered. But lining it with a complete stainless steel overlay proved a better, far less expensive solution.

The tough, corrosion-resistant stainless lining successfully fights the attack of hot liquors and gases, adds strength, and gives the entire unit a new lease on life—all at as low as $\frac{1}{3}$ the cost of replacement. What's more, should it become necessary, additional overlay metal

can be applied locally to extend the life of the digester even more.

This is just one example of how stainless equipment in the paper mill prevents rust and wear . . . minimizes corrosion and erosion . . . adds years to processing equipment. Further information is contained in a 20-page booklet "Making the Most of Stainless Steels in the Pulp and Paper Industry". Write now for your free copy. *Crucible Steel Company of America, Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE

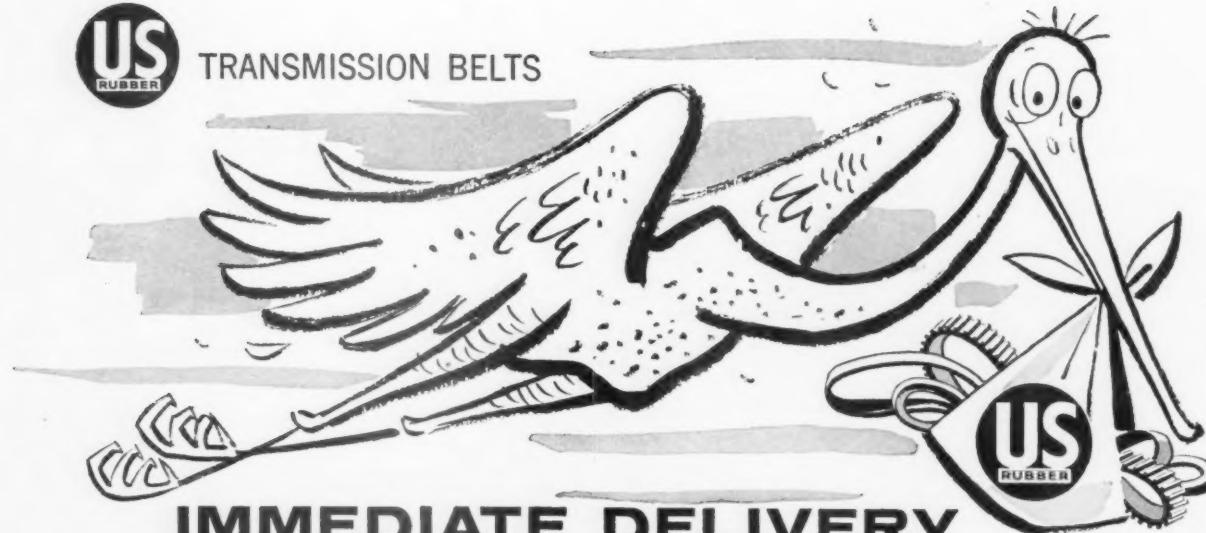
first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor—Railway & Power Engineering Corp., Ltd.

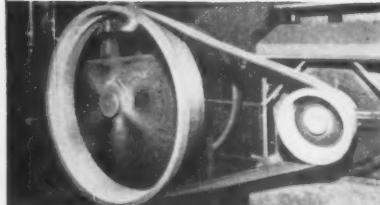


TRANSMISSION BELTS



IMMEDIATE DELIVERY

from a Complete Line



The complete V-Belt line includes famous U.S. Rainbow®, U.S. Royal Super-Service, and fractional horsepower belts (made by the error-proof Electronic Tension method to eliminate vibration, increase service life).



"U.S." Flat Belts come in special cord-constructed endless lengths or in duck roll belting. "U.S." production techniques guarantee quality performance.



The PowerGrip "Timing" Belt was awarded the Franklin Institute's 1955 Longstreth Medal—for "invention of high order." By providing near-100% efficiency in positive, non-slip, split-second timing, it has become standard equipment in a wide variety of machines and appliances.

FLAT BELTS

V-BELTS

TIMING BELTS

All Sheaves and Pulleys

"U.S." is really geared to deliver. You really get immediate delivery or shipment—thanks to your local "U.S." distributor backed by the strategically located District Sales Offices and transcontinental chain of warehouses. The "U.S." Transmission Line includes flat belts and belting, V-belts, sheaves, and PowerGrip "Timing"® Belts and pulleys for any power transmission need.

These belts, sheaves and pulleys—plus expert engineering assistance by power transmission specialists—are available at "U.S." power transmission distributors, any of our 28 District Sales Offices, or write us at Rockefeller Center, New York 20, N. Y.



V-Belt Sheaves and "TIMING" Belt Pulleys



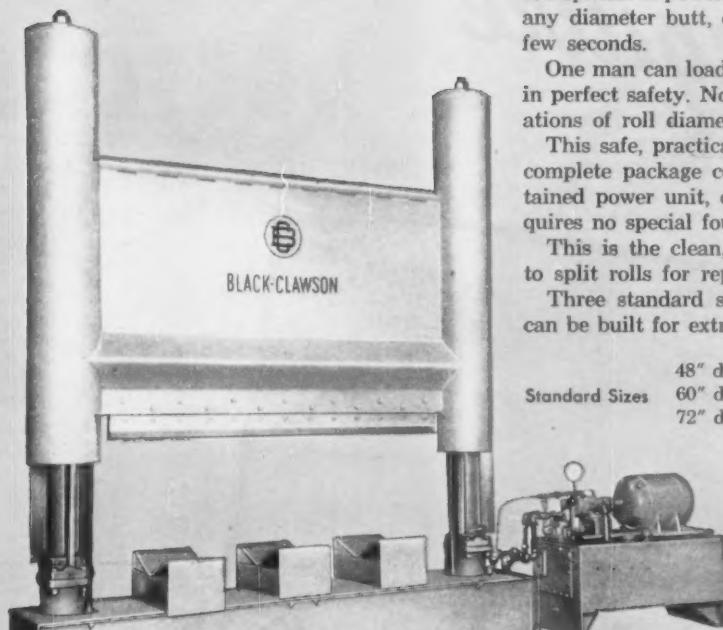
are tested for static balance and engineered to deliver the high durability and efficiency that are built into every "U.S." Belt.



Mechanical Goods Division

United States Rubber

new Hydraulic Roll Splitter... saves time—splits rolls in seconds



This new Black-Clawson guillotine type roll splitter is powerful and fast—will split any diameter butt, end or reject roll in a few seconds.

One man can load and operate this unit in perfect safety. No adjustments for variations of roll diameters.

This safe, practical machine comes as a complete package complete with self-contained power unit, controls and base. Requires no special foundation.

This is the clean, efficient modern way to split rolls for repulping.

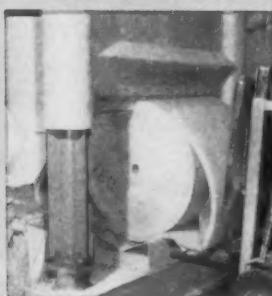
Three standard sizes, but special sizes can be built for extra large rolls.

Standard Sizes
48" diameter by 60" face rolls
60" diameter by 72" face rolls
72" diameter by 84" face rolls

Write to the
Shartle Division
and ask for
MB 121-A



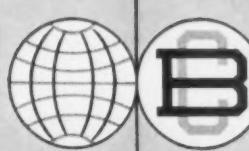
Roll in position
for splitting



Knife starts to cut



Roll falls into sheets
ready for repulping



THE BLACK-CLAWSON COMPANY
SHARTLE DIVISION, MIDDLETOWN, OHIO

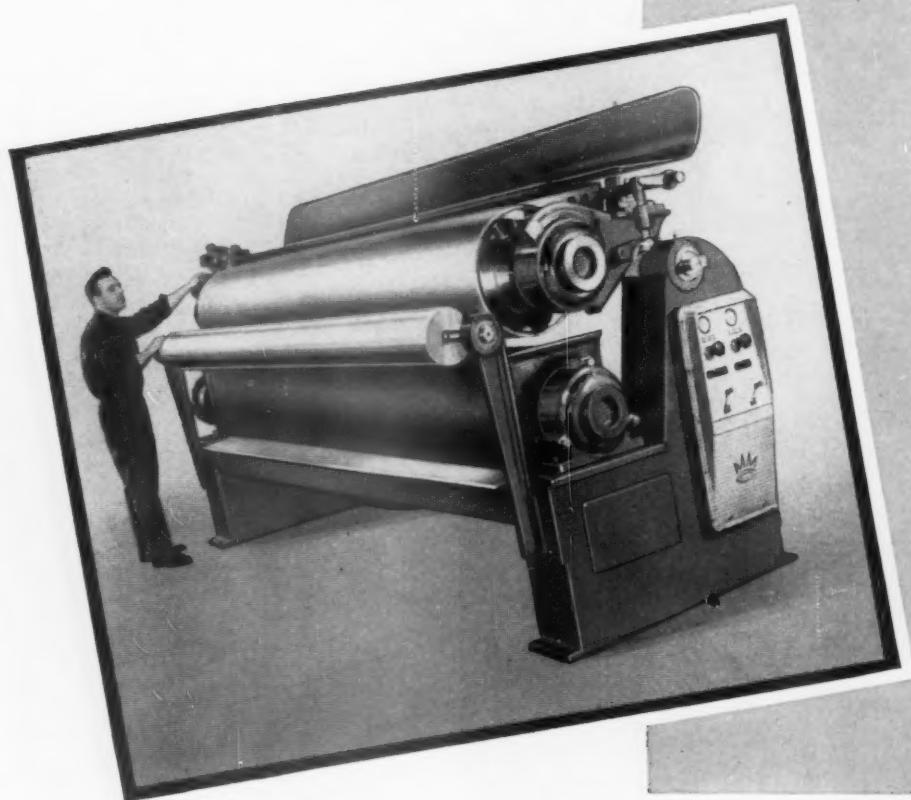
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**MODERN
PRESSES**

require

**MODERN
DOCTORS**



It is good business to specify the doctor
that is equal in engineering to the machine.

You can be sure if it is LODDING.

On this Manchester Machine Company
size press only LODDING could match the
quality of the machine.

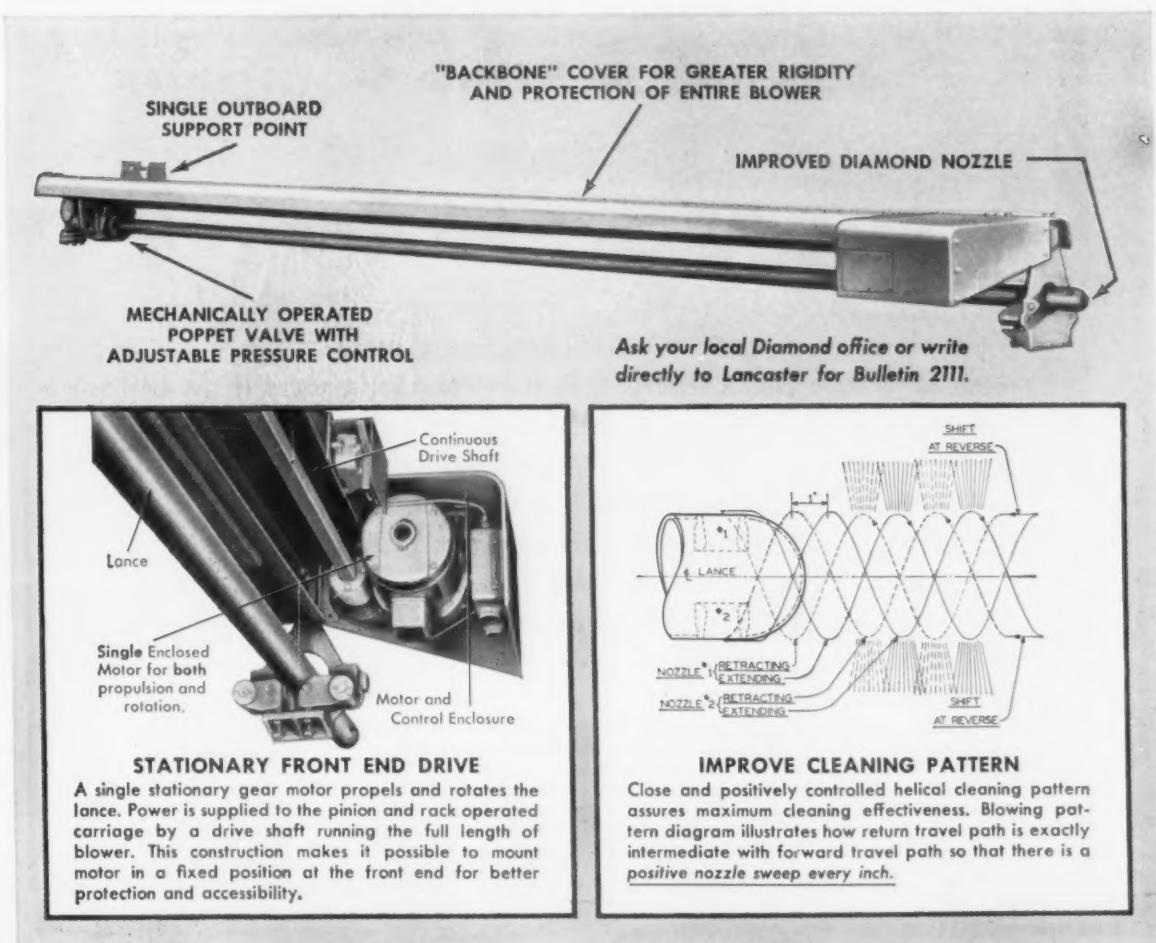
LODDING ENGINEERING CORPORATION
WORCESTER, MASSACHUSETTS

Introducing DIAMOND SERIES LONG RETRACTING BLOWER

300 IK

Setting new and higher standards of efficiency, economy and dependability in the cleaning of heating surfaces that require a long retracting lance, the Diamond Series 300 IK Blower offers many outstanding features. Some of these are shown below. Others are: positive gear carriage drive . . . nozzle-sweep-every-inch cleaning pattern . . . oversize lance (step-tapered for extra long travel) . . . designed for quick, easy servicing.

This new blower is the culmination of more than 20 years experience building and applying long travel blowers. It well illustrates the Diamond design philosophy: "Keep it simple . . . keep it basic . . . avoid unnecessary complications." It is further evidence of the fact that **YOU CLEAN BOILERS BETTER AND AT LOWER COST WITH DIAMOND BLOWERS.**



**DIAMOND POWER
SPECIALTY CORP.**
LANCASTER, OHIO

DIAMOND SPECIALTY LIMITED—Windsor, Ontario

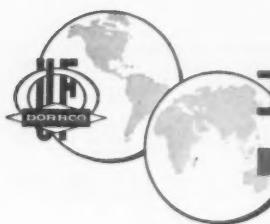
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New Oliver Brownstock Washing System

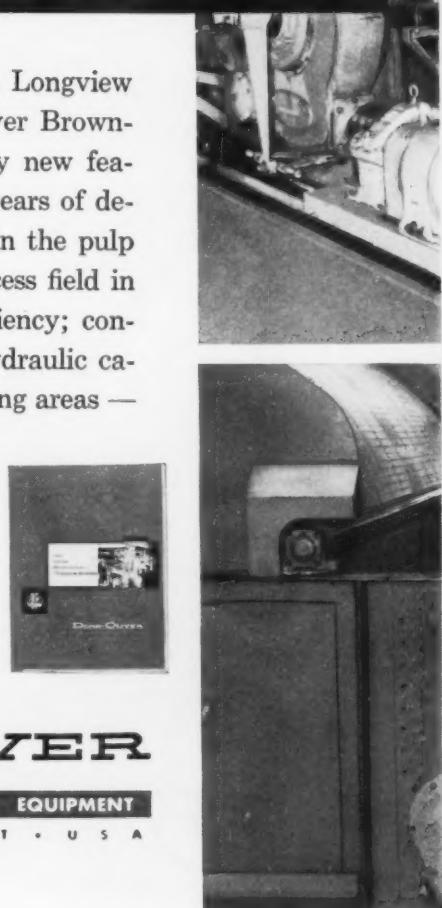
**Plays Integral Role
in Plant Expansion at
Longview Fibre Company**

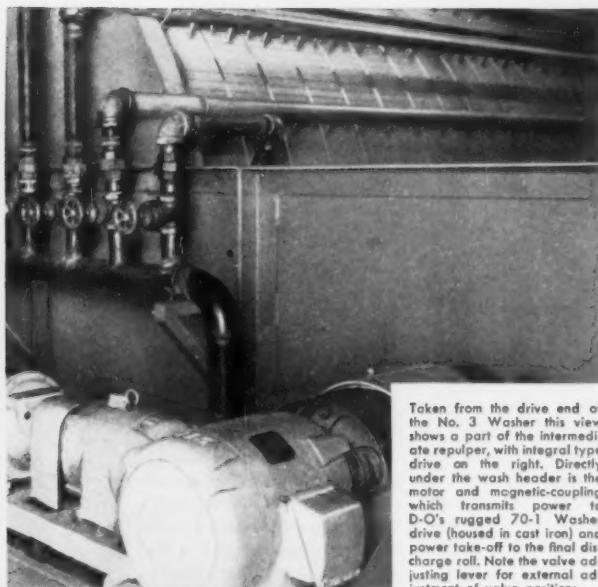
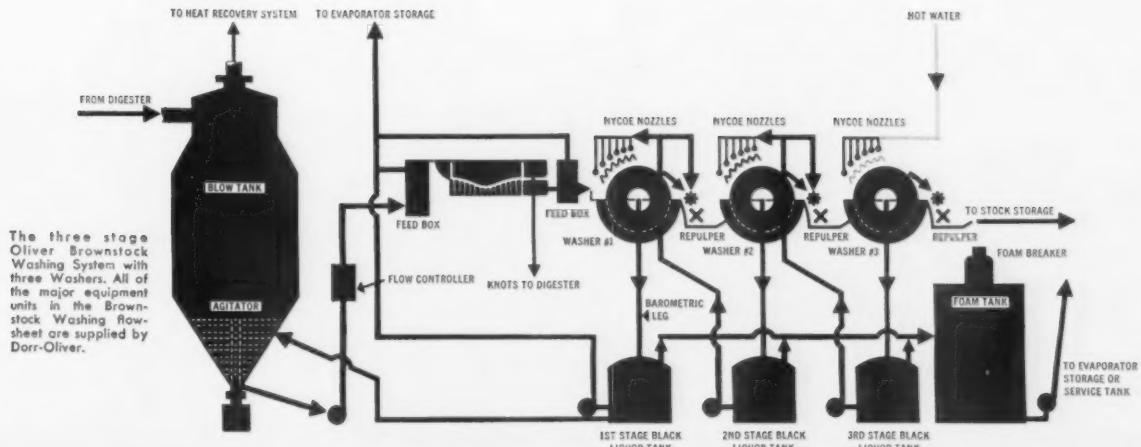
An integral part of the new plant expansion program at Longview Fibre Company, Longview, Washington, is the new Oliver Brownstock Washing System. The D-O System contains many new features based upon knowledge gained from more than 35 years of designing, engineering, and servicing hundreds of washers in the pulp and paper field as well as thousands of filters in the process field in general. Among these distinctive features are: high efficiency; controlled pulp discharge; uniform sheet formation; high hydraulic capacity — up to 20,000 G.P.M.; and a wide range of filtering areas — from 200 to 722 square feet.

For more complete information on the Oliver Brownstock Washing System write for a copy of Bulletin No. 3303, Dorr-Oliver Incorporated, Stamford, Connecticut; or better still, let us send a Dorr-Oliver engineer to discuss your specific filtration or washing problem with you, placing at your disposal the wealth of information accumulated through our 35 years of Brownstock Washing experience.



DORR-OLIVER
INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • USA

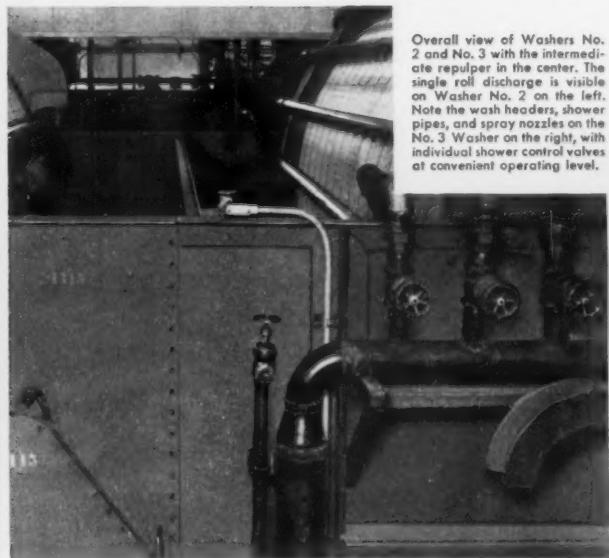




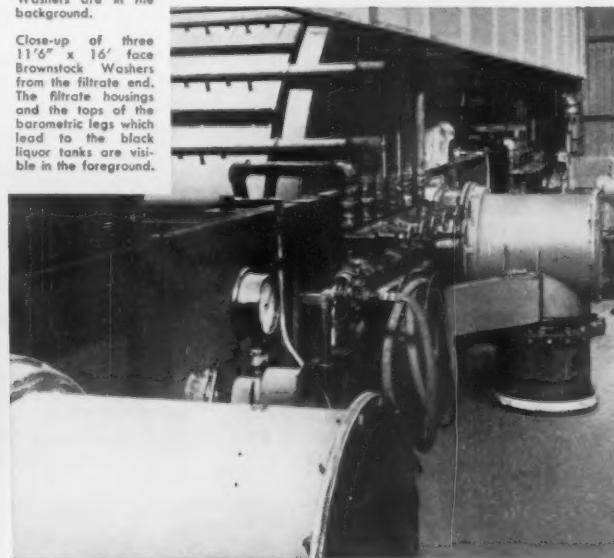
Taken from the drive end of the No. 3 Washer this view shows a part of the intermediate repulper, with integral type drive on the right. Directly under the wash header is the motor and magnetic-coupling which transmits power to D-O's rugged 70-1 Washer drive (housed in cast iron) and power take-off to the final discharge roll. Note the valve adjusting lever for external adjustment of valve positions.



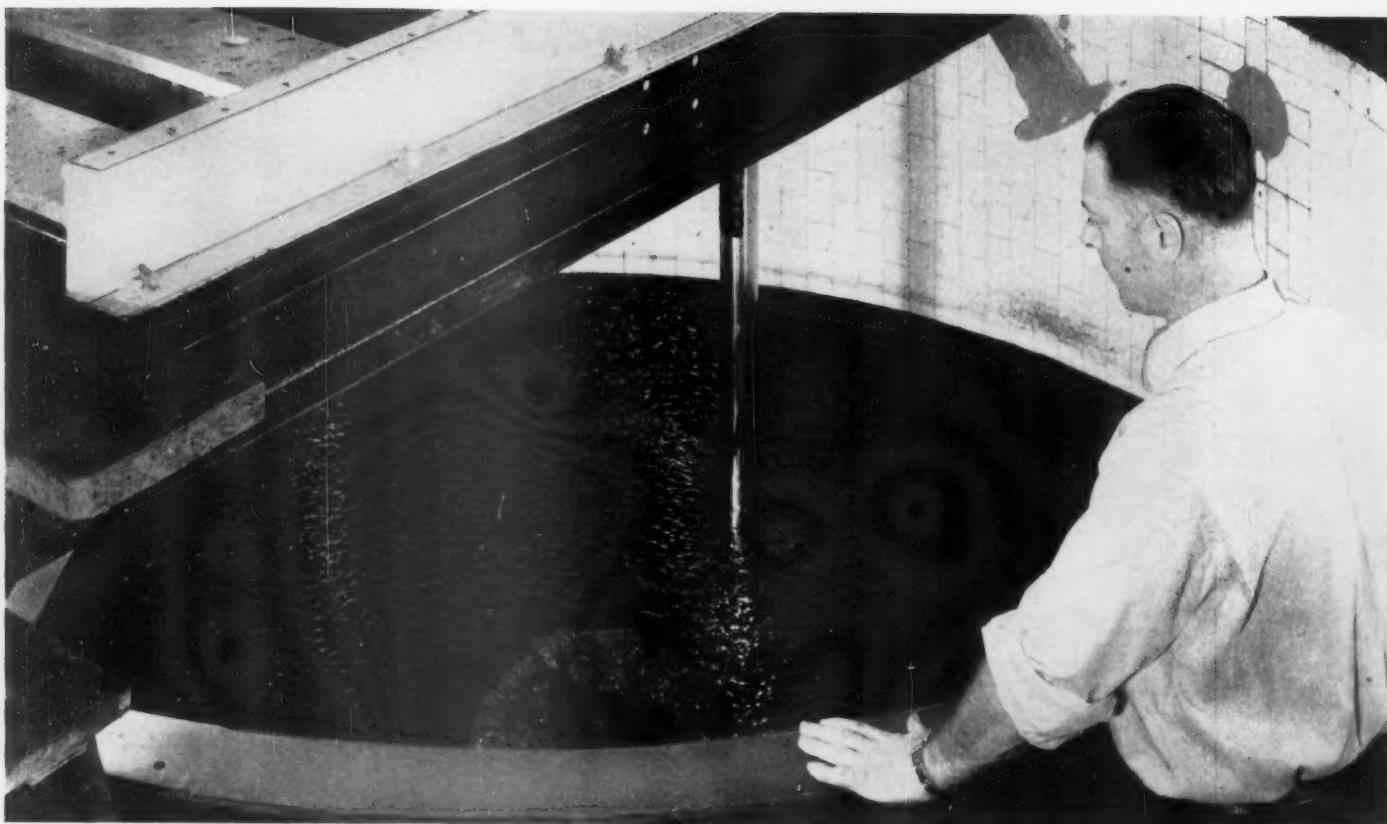
General view of three Oliver Brownstock Washers at Longview Fibre Company, with the three operating consoles installed for easy operation. The control panel for the three knotters and the No. 1 Washer is in the foreground and the control panels for the No. 2 and the No. 3 Washers are in the background.



Overall view of Washers No. 2 and No. 3 with the intermediate repulper in the center. The single roll discharge is visible on Washer No. 2 on the left. Note the wash headers, shower pipes, and spray nozzles on the No. 3 Washer on the right, with individual shower control valves at convenient operating level.



Close-up of three 11 1/8" x 16' face Brownstock Washers from the filtrate end. The filtrate housings and the tops of the barometric legs which lead to the black liquor tanks are visible in the foreground.



EASTMAN KODAK COMPANY, Rochester, N.Y.

STOCK DOESN'T STRATIFY in this LIGHTNIN-mixed chest. From top to bottom, every pound stays at the same consistency. Thorough mixing levels out consistency fluctuations of incoming stock, providing a uniform effluent.

How Kodak gets uniform stock out of the machine chest

Here's evidence that the way you mix stock in the chest can make a powerful difference on the wire.

At Eastman Kodak Company, a uniform sheet is a "must" in producing top-grade photographic papers. Stock settling or stratifying in the machine chest could make the sheet vary, first above, then below the critical weight limits.

Kodak helps solve this quality problem with LIGHTNIN Mixers in mixing and machine chests. The LIGHTNIN you see here puts just enough horsepower into the chest to keep stock flowing in a diagonal pattern, constantly intermixing and equalizing the entire chest

contents. Another factor in maintaining uniformity, in this installation, is a level-control in the machine chest.

Uniform within 0.2%

Incoming stock is dispersed uniformly throughout the chest. Consistency differential between top and bottom of the chest averages only 0.1%, with 0.2% the maximum range.

This thorough mixing "ironed out" the fluctuations in stock consistency caused by heavier or lighter stock coming into the chest.

It provides a highly uniform effluent, greatly reducing demand on the consistency controller. Rewards include a uniform sheet, obtained with a

minimum of headbox corrections.

How you can get results like these

You can get results comparable to these, out of your stock chests. Blend stock of different types; control color; add size and other ingredients—with full uniformity—in as little as six minutes.

LIGHTNIN Mixers are delivering uniform stock in more than 35 mills. In practically every case, mixing results are fully predictable—unconditionally guaranteed.

For quick, competent help, call in your LIGHTNIN Mixer representative. He's listed in Thomas' Register. Or write us direct.

Lightnin® Mixers

MIXCO fluid mixing specialists

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

- B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP
- B-103 Top entering; propeller types: 1/4 to 3 HP
- B-108 Portable: 1/6 to 3 HP
- B-104 Side entering: 1 to 25 HP
- B-112 Laboratory and small-batch production types
- B-109 Condensed catalog showing all types
- B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing
- Paper stock mixing data sheet for figuring mixer requirements

Check, clip, and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc., 141-d Mt. Read Blvd., Rochester 11, N.Y.
In Canada: Greer Mixing Equipment, Ltd., Toronto 10, Ont.

NO BAFFLES are needed in chest. LIGHTNIN Mixer, positioned off center, produces uniform stock in six minutes from standstill, without swirl or vortex.



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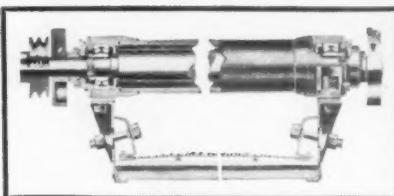
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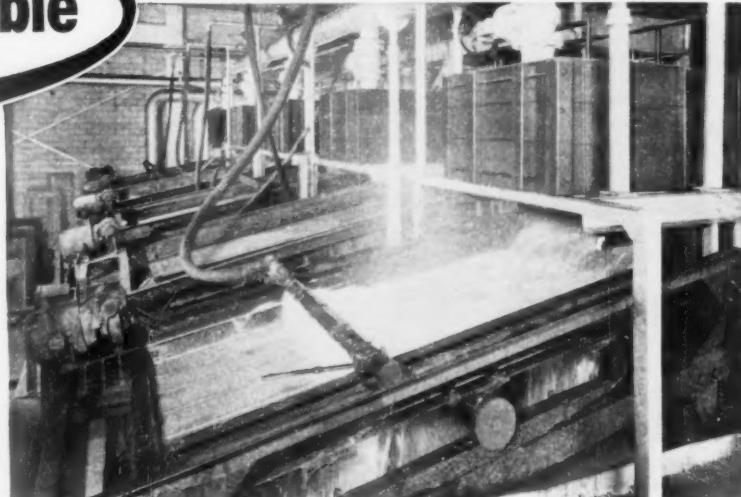
LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarborough (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World.

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LOW-COST ANTI-POLLUTION PROTECTION is provided by Link-Belt Liquid Vibrating Screen under hydraulic barker. Nearly 1000 gal. per min. are delivered to screen, which removes small bark solids before discharging water to river.

TOP PROFIT from reclaimed pulp is obtained with five Link-Belt Liquid Vibrating Screens, each equipped with a power-propelled travelling spray. Both dewatered pulp and clarified water are returned to the system for re-use.



THROUGHOUT the paper industry, plants which formerly relied on slow, ineffective methods of waste disposal have reduced costs to a negligible minimum . . . have been able to successfully meet requirements of anti-pollution laws. Others having salvageable wastes now reclaim them at a profit.

Wherever relatively fine solids must be separated from large vol-

umes of liquids, the efficiency of Link-Belt Liquid Vibrating Screens provides an economical answer. With their special deck which permits use of a very fine screen cloth . . . plus high-frequency, small-amplitude vibration—maximum solids retention and liquid passage is assured.

Call your nearest Link-Belt office for expert counsel on your screening problems. Or send for Book 2377-A.

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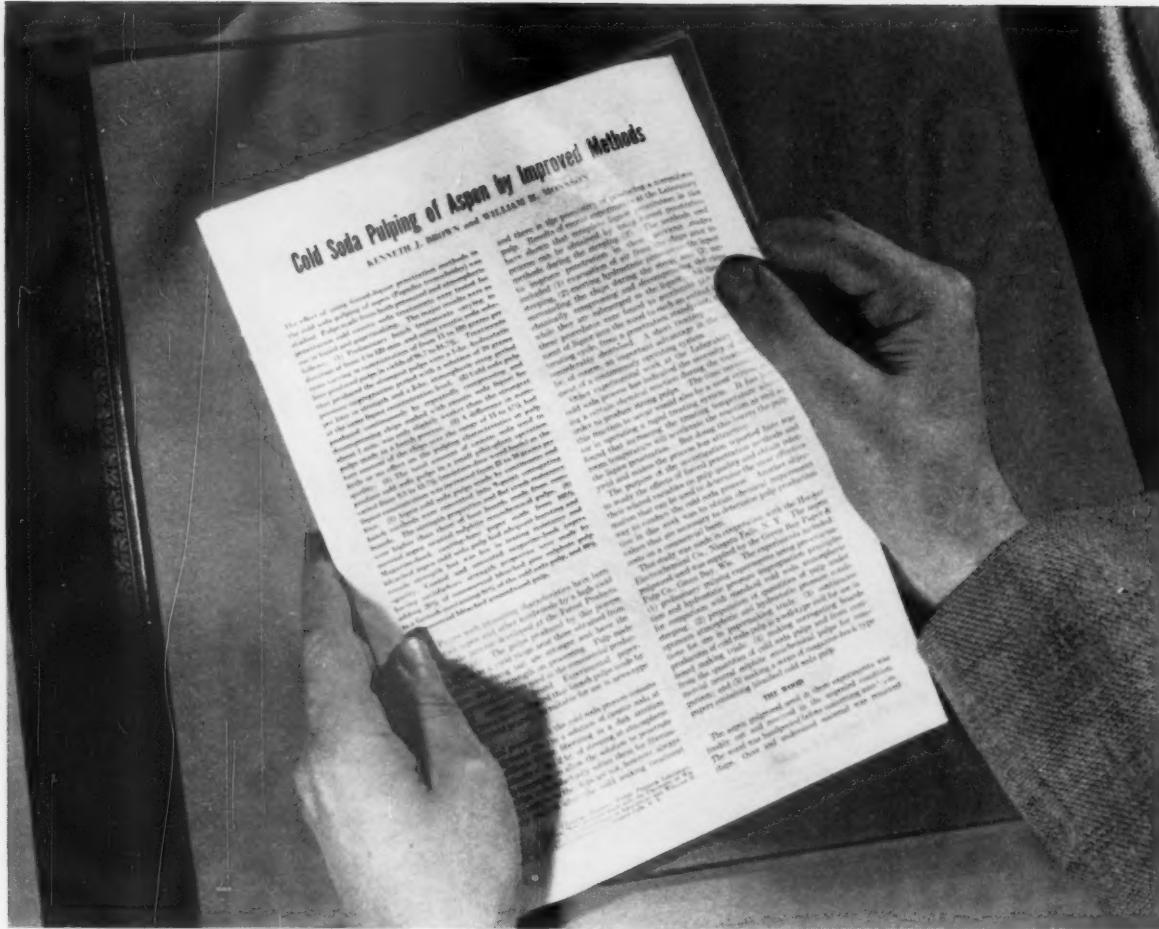
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"Cold Soda Pulping of Aspen by Improved Methods"

New high-yield process makes uniform cold soda pulp

A new, improved process for steeping aspen pulp in cold caustic soda shows great promise for making corrugating board and news-type papers.

The Forest Products Laboratories with our cooperation put the new process to the following tests:

1. Pre-evacuated aspen chips were steeped in cold caustic soda under hydrostatic pressure. The resulting pulp was compared with standard cold caustic pulp steeped under atmospheric pressure.

Results show that in this process the liquor penetrates the aspen chips

completely and produces a highly uniform pulp. Thus the process overcomes the most serious objection to previous methods of cold caustic steeping.

2. 9-point corrugating board was made from cold caustic pulp produced continuously in a roll-type mill and from pulp produced under hydrostatic pressure.

The board shows higher strength properties than four other boards made from commercial neutral sulfite semi-chemical pulp. The new board has above average folding endurance and a flat-crush value of about 32 pounds

per square inch.

3. A series of magazine-type book papers was made from the cold steeped pulp.

Results indicate that the new pulp is suitable in every way for news-type papers.

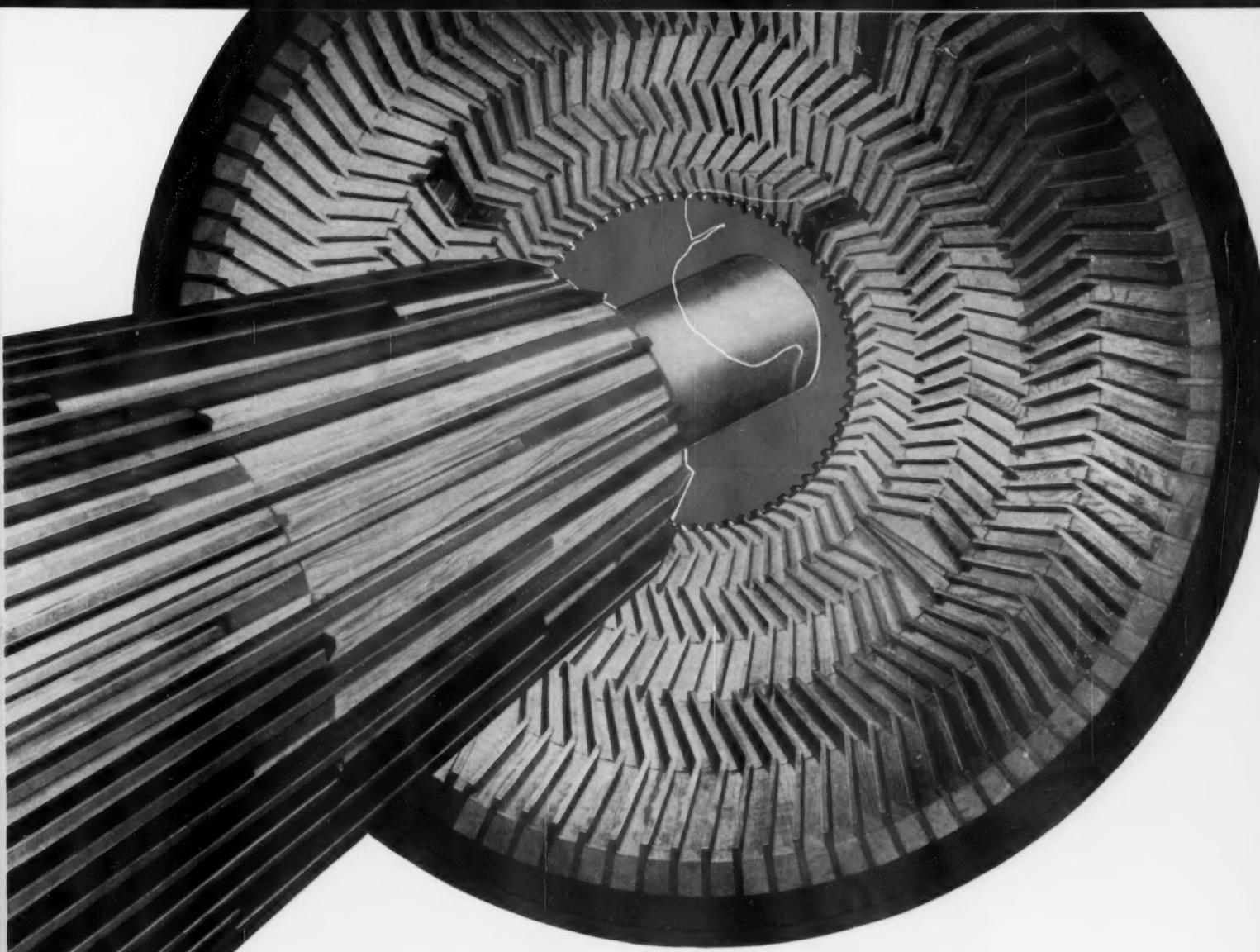
You can look into the economics of this new process by writing for Bulletin 250 (a reprint of the article on cold caustic steeping which appeared in the August, 1956 issue of TAPPI magazine). It discusses the process and its results in detail.

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IDENTICAL PLUG AND SHELL KNIFE properties on *every* order results from Bolton's modern scientific Microlyzing process.

Microlyzing begins in the laboratory with photo-microstructural analysis and destructive mechanical testing of samples of all raw stock. Continuing during production, non-destructive tests and microstructural studies assure that these quality control standards are maintained: Heat-treating time, critical heat-treating temperatures within tolerances of 5 degrees.

All steps in Microlyzed custom-processing — from raw stock to finished knives — are performed in the Bolton plant by skilled craftsmen. Every lot of knives is inspected frequently during processing for its complete identity to pre-determined standards.

Microlyzing is your guarantee that your Bolton Fillings are *uniformly* precision-engineered for proper balance, hardness and toughness. Microlyzing is another

reason why papermakers have made Bolton the leader in the manufacture of Jordan fillings for refining efficiency.

ALL BOLTON FILLINGS ARE MICROLYZED

PLUG — Wedgeless, Ring Type, or Plug Fillings of special design made from complete manufacturing information to assure perfect fit.

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MICROLYZED Bolton Knives are built to fit all sizes and kinds of Jordans in alloy steel, stainless steel, phosphor bronze and other special alloys. Separator materials include kiln-dried hardwood, South American Bethabara, and RLY, the new Bolton synthetic filler. There's one for your specific need, refining condition.

Today more papermakers are specifying Bolton. Send for Bulletin F-556, "Bolton Microlyzed Fillings." Address John W. Bolton & Sons, Inc., Lawrence, Mass.

*REG. T. M. APP. FOR.



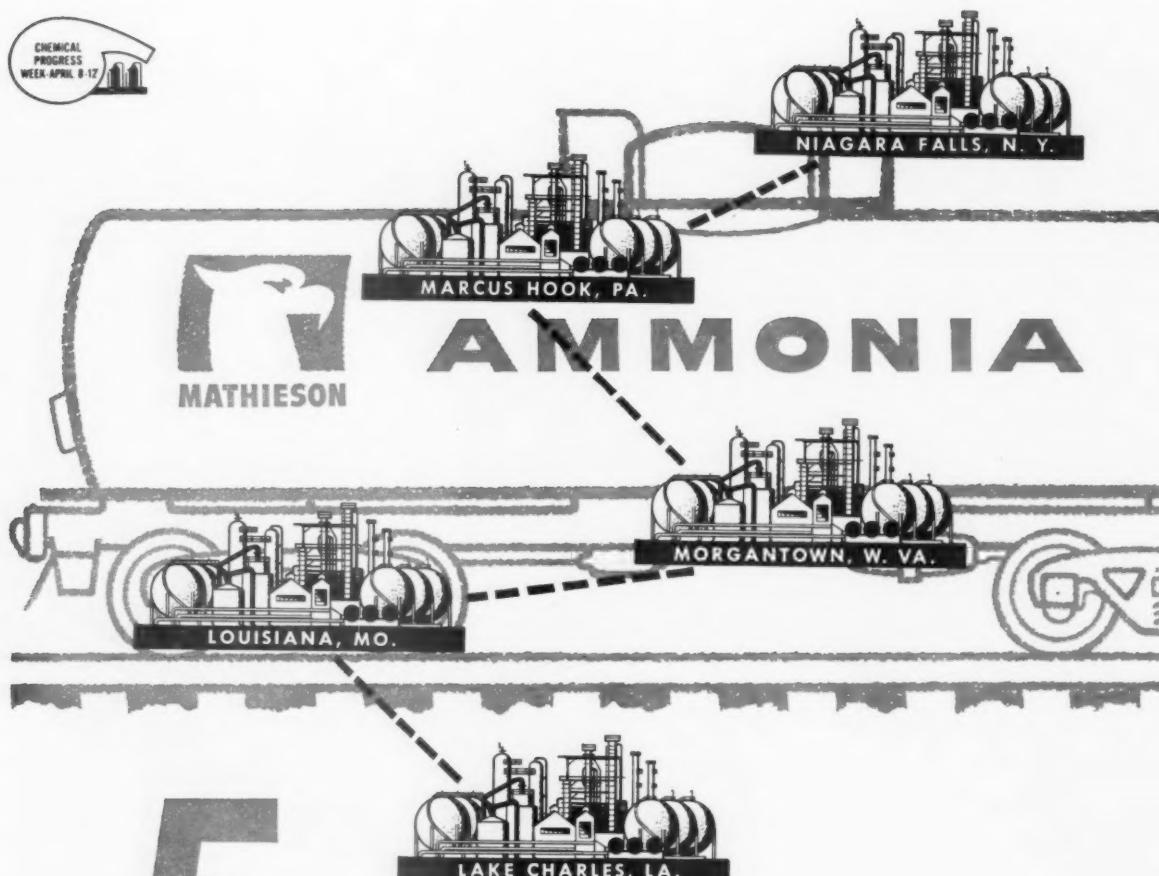
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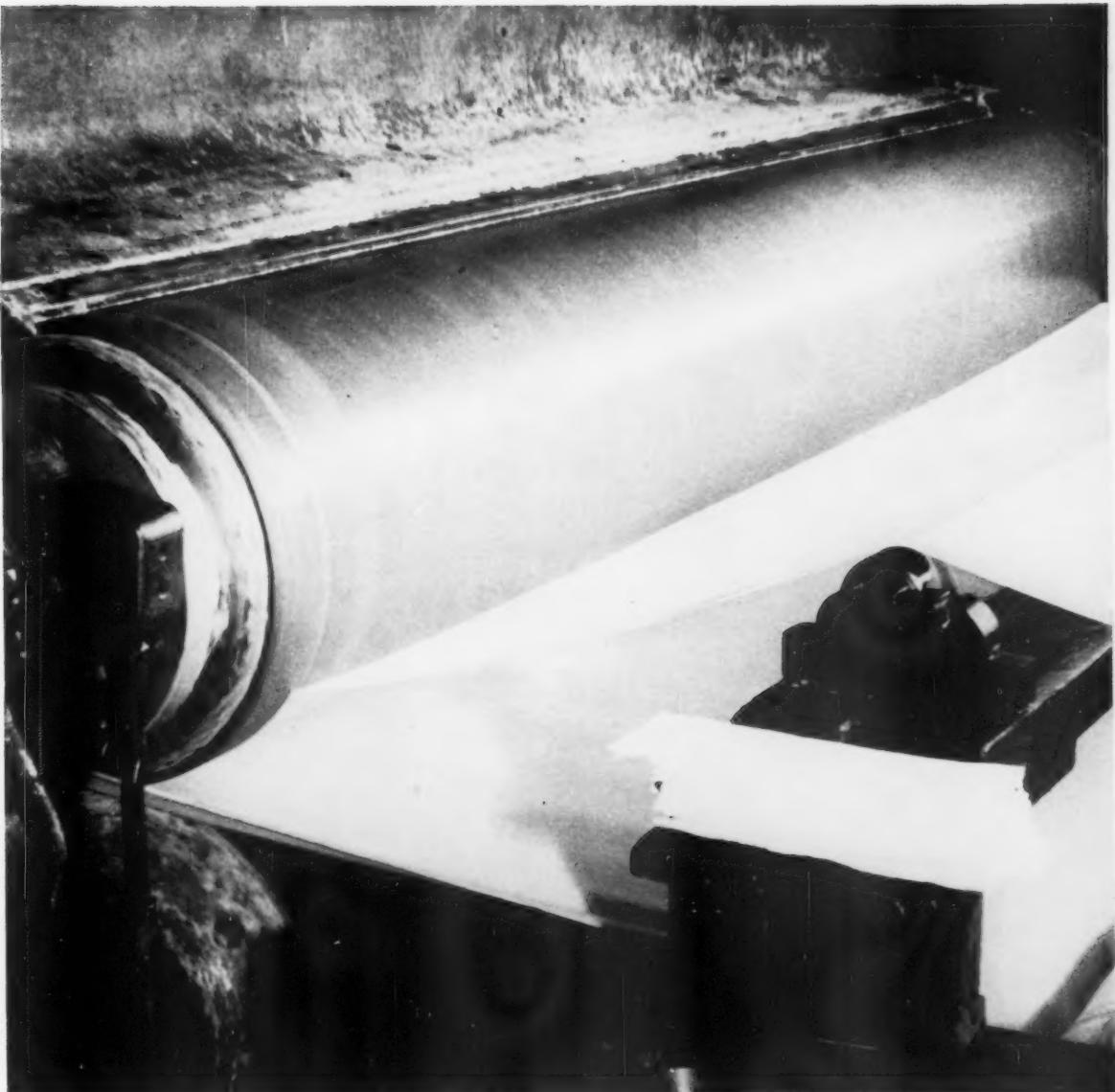
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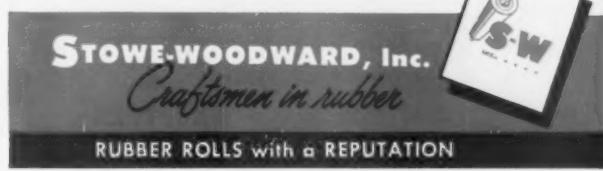
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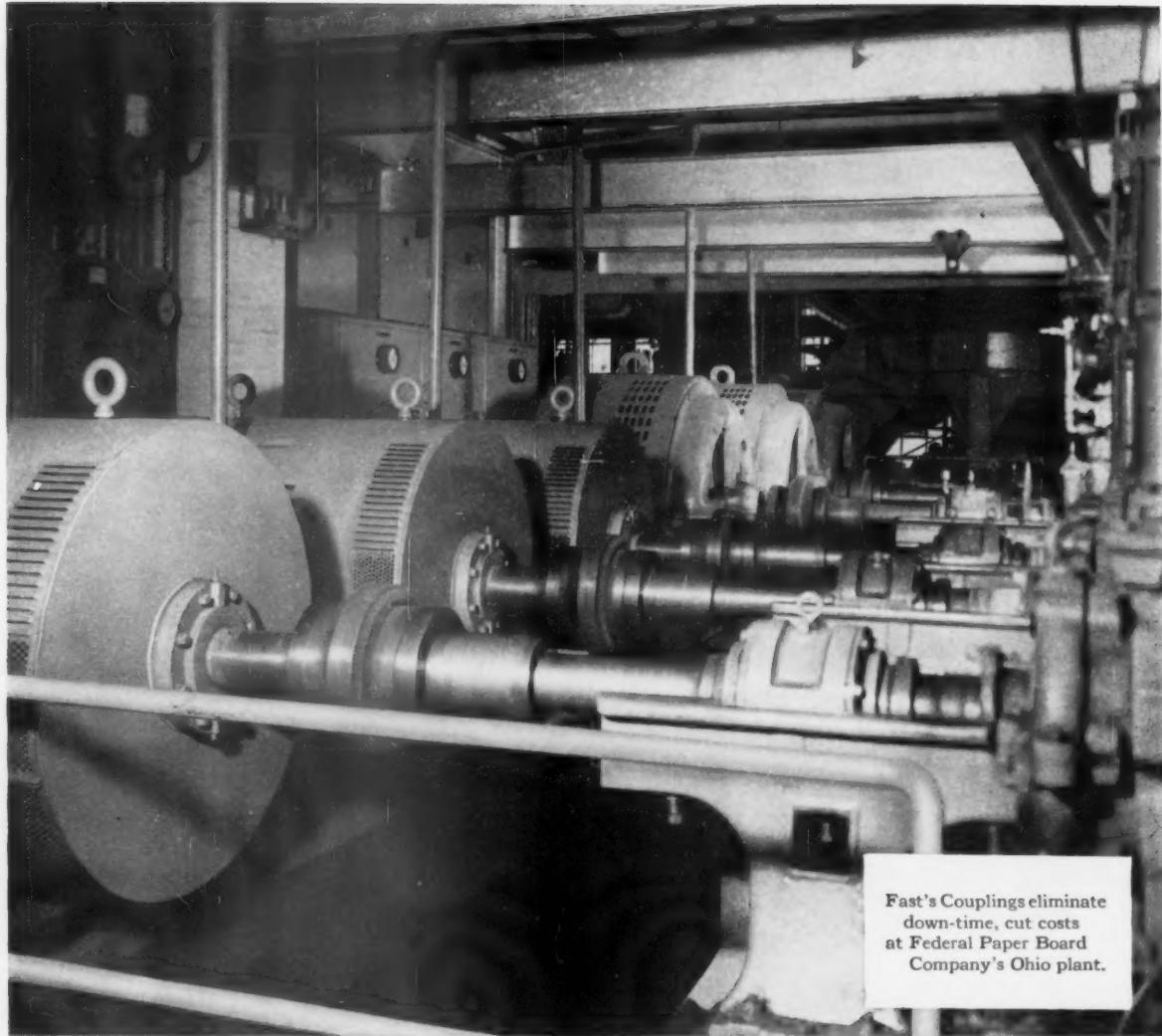
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PULP & PAPER — April 1957



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• On the West Coast: HUNTINGTON RUBBER MILLS, INC., SEATTLE



Fast's Couplings eliminate down-time, cut costs at Federal Paper Board Company's Ohio plant.

Federal Paper Board Company has specified Fast's Couplings since 1944

In 1944, the Steubenville, Ohio, Mill of Federal Paper Board Company installed three #5 Jordantype Fast's Couplings to obtain maximum power transmission with minimum down-time. In 1946, this firm installed three additional #5 Fast's Couplings. Again in 1950, Federal Paper Board Company specified Fast's Couplings, three #4½ Jordans.

Recently, Mr. R. J. Quinn, master mechanic of this plant, stated: "Not one of these Fast's Couplings has given us any trouble whatever. They're

absolutely essential to our plant production. If these Fast's Couplings failed, our plant would be forced to shut down." Mr. Quinn uses many other standard Fast's Couplings throughout the plant, and is completely sold on them.

There's a Fast's Coupling for every power transmission application. Remember: *Fast's Couplings usually outlast the equipment they connect.* For catalog write to: KOPPERS COMPANY, INC., Fast's Coupling Dept., Metal Products Division, 2704 Scott Street, Baltimore 3, Maryland.

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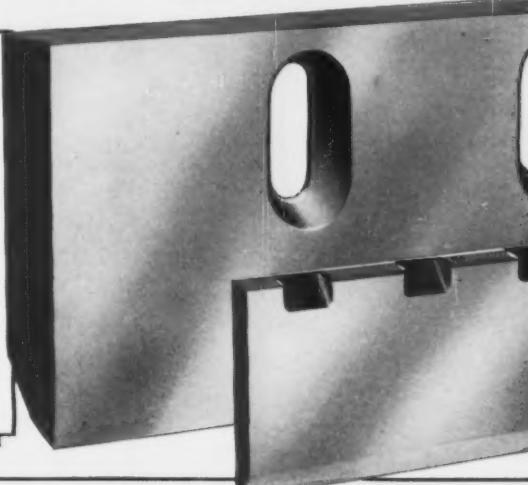
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**-with SIMONDS
T-18 Chipper Knives**

More Chips in Good Shape!

For more usable chips and less waste dust, get Simonds T-18 Steel Knives. They're made extra tough to take high speeds and heavy cuts without cracking or chipping out.

They hold a sharp cutting edge *hours longer* — produce uniform chips *hours longer*.



**-with SIMONDS
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Their Keener Edge Stays Sharp Longer!

Simonds-made S-301 Steel — developed especially for cutting paper — combines maximum hardness with toughness to give you more cuts per grind. Face-side taper, concave ground for added clearance, plus Simonds famous "mirror finish," provide a keener edge that cuts free, fast and straight. There's longer life in a Simonds Knife!

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On thinnest tissue or thickest board, Simonds circular cutters, slitters and perforators cut smooth, easy and true. These "cost cutting cutters" are made of Simonds own special electric-furnace steel — specially heat treated and precision-ground to uniform roundness and thickness. There is no better steel for edge holding. There is no better value for your cutter money.



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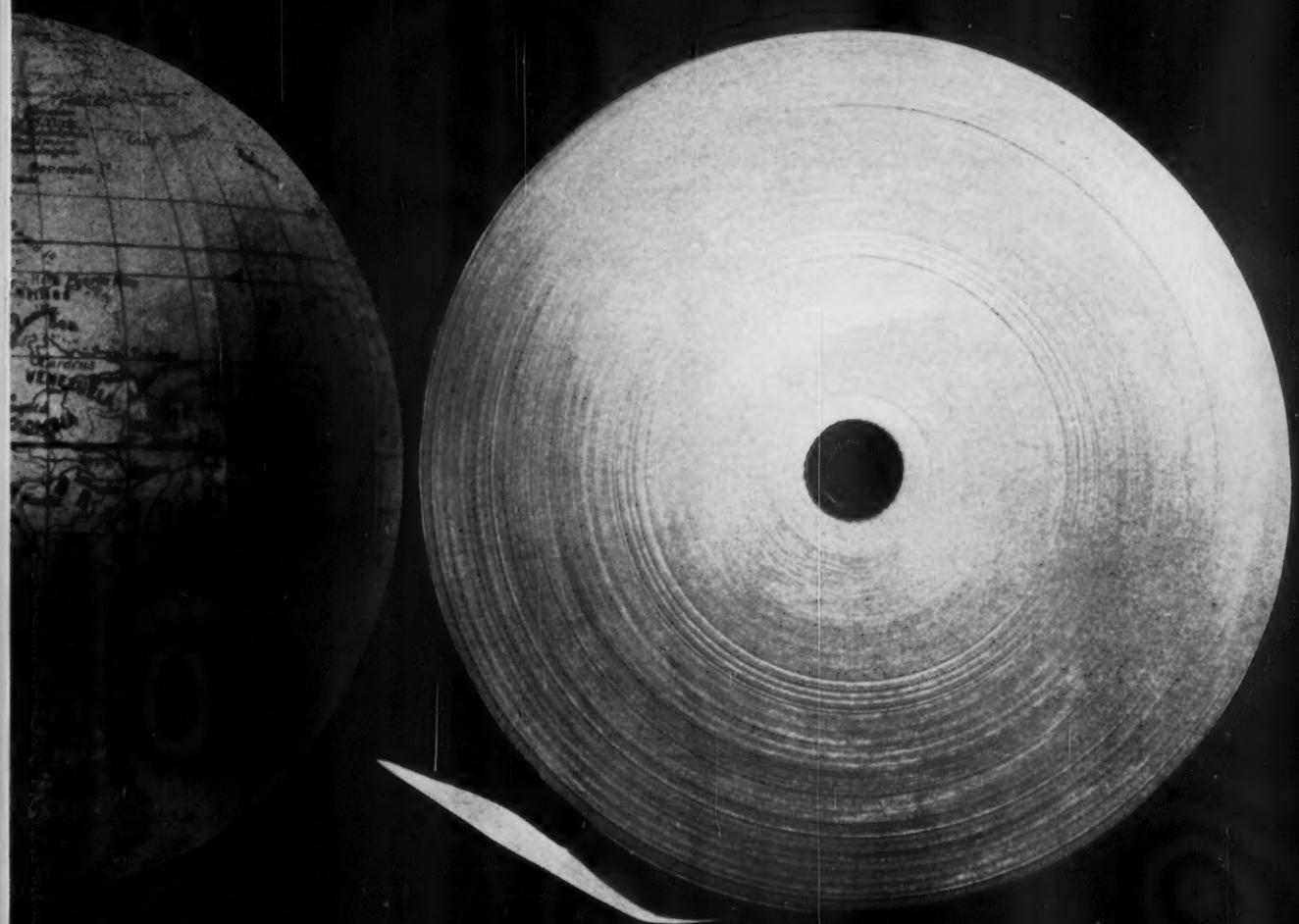
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Chlorine Dioxide Bleached

*balanced
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created by papermakers
for papermakers*

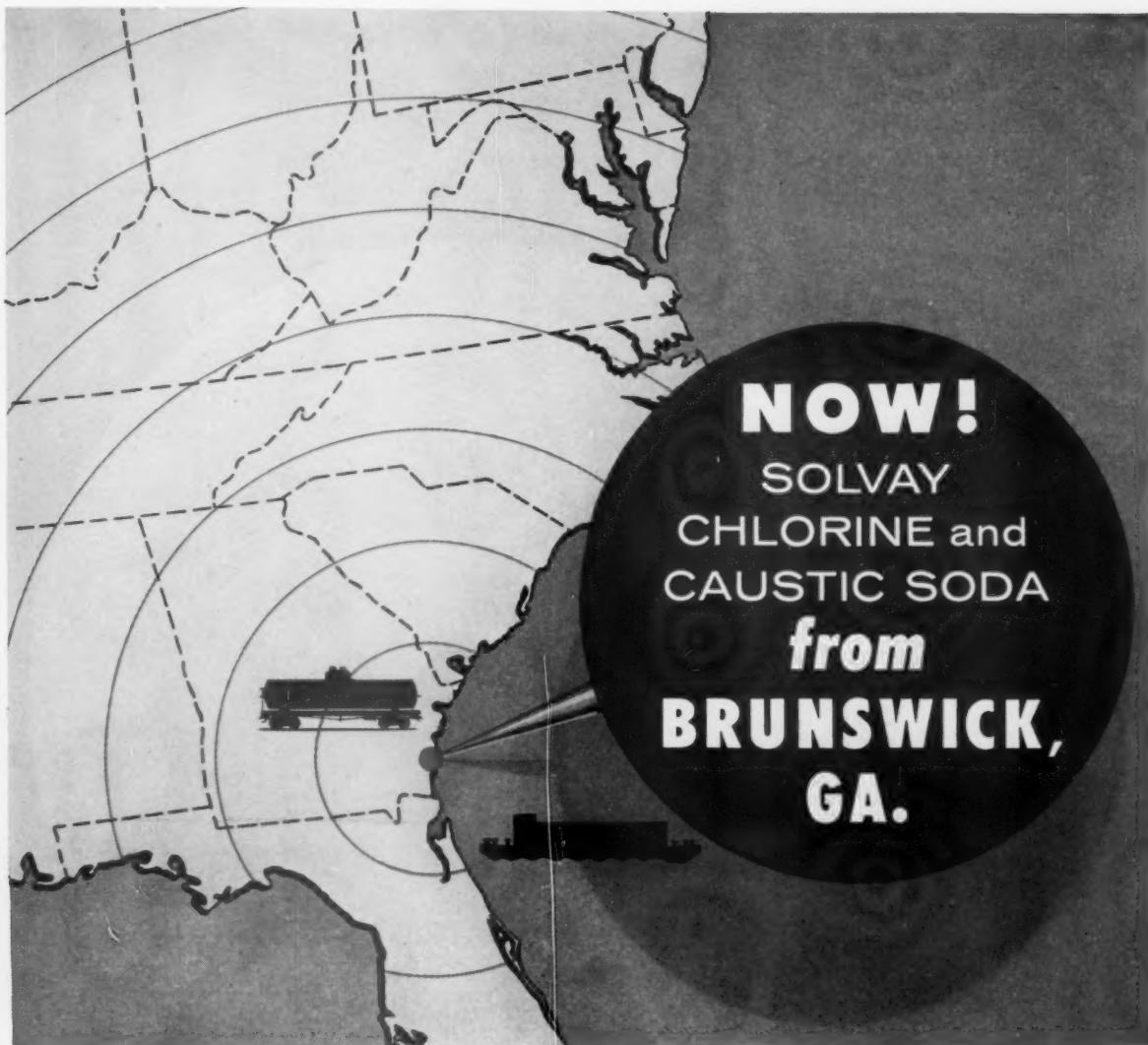


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Throughout the free world, papermakers use and like Riegel's Albacel and Astracel, the paper-grade pulps that provide the right balance of all important qualities for brightness, cleanliness, strength, formability and proper beating characteristics.

Riegel Paper Corporation

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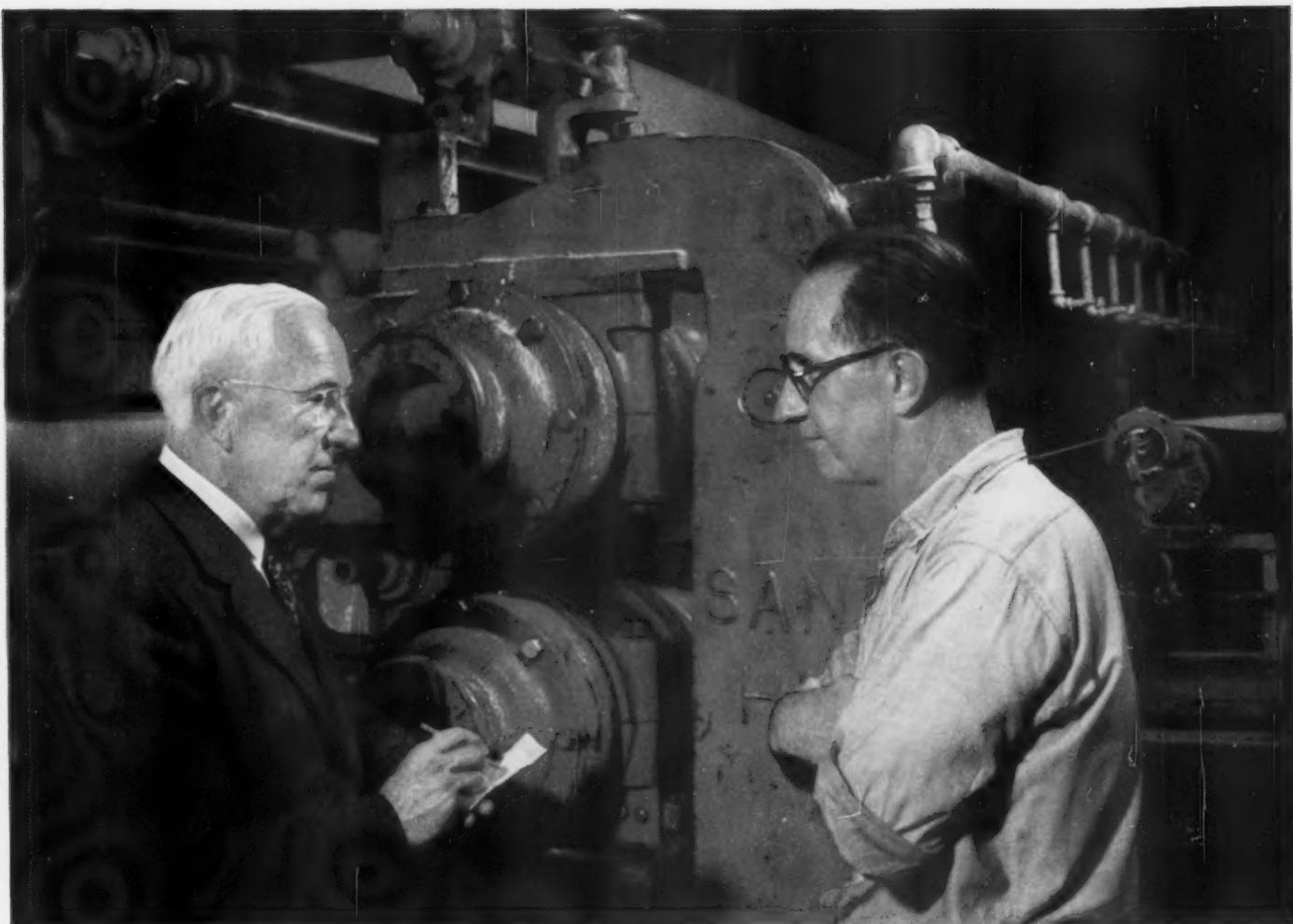
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A veteran Albany Felt Sales Engineer discusses an operating problem with a machine tender.



Sales Engineer John Howell (left foreground) discusses felt designs at a meeting of Albany Felt Service Engineers, Designers and Manufacturing personnel. Below: trainees for the Sales Engineering staff work in every manufacturing department to learn felt-making processes.



Meet the men who can help YOUR machines run better!

This may sound like a broad statement, but Albany Felt Company's Sales Engineers are doing just that, almost every day of the year. Their years of technical training and experience in the field have been devoted to one purpose — to serve you better!

Your Albany Sales Engineer is ready to help you solve problems related to felt performance. Albany's outstanding Service Engineers, Designers, research and manufacturing specialists — also are available to develop a quick solution. Even after this has been found, your Sales Engineer will be on hand to follow up the case in question, to be sure you continue to achieve top performance from your Albany Felts.

Let your Albany Sales Engineer make regular felt performance checks on your machines — you'll find it will pay off in improved efficiency and trouble-free performance. His goal, as always, to help you produce **more saleable tons per day!**

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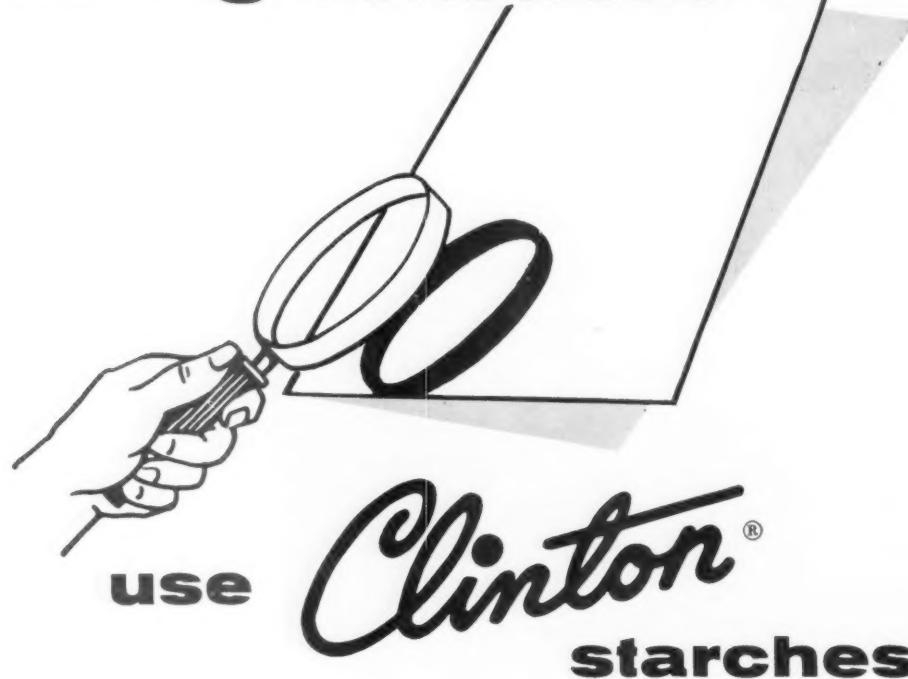
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Clinton is just as interested in coatings as you are. Why? Because a coating — *any coating* — is no better than the adhesive that holds it together and binds it to the paper. Clinton starches and dextrins do an admirable job in both respects.

And if it's "size-satisfaction" you're looking for, Clinton starches are sure to measure up to your most hopeful expectations.

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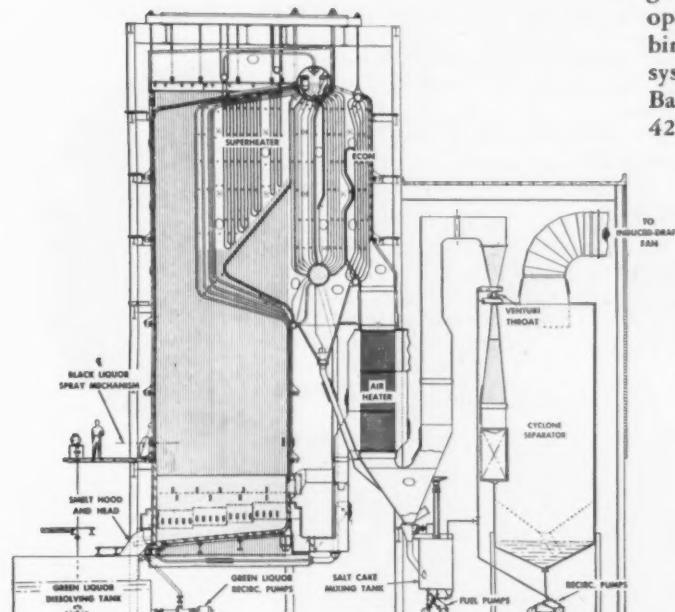
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AT MANY WELL KNOWN MILLS

Venturi Evaporator- Scrubbers

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B&W RECOVERY
SYSTEMS

assure greater
operating efficiency



VENTURI EVAPORATOR - SCRUBBER LICENSED
FROM PEASE, ANTHONY EQUIPMENT CO.

A notable advance in black-liquor recovery is illustrated by the B&W System shown, which features the Venturi Evaporator-Scrubber, and is typical of installations in operation at the Thilmany, D. M. Bare, Western Kraft, Potlatch Forests, Southern Kraft and other pulp and paper plants.

The B&W Venturi Evaporator-Scrubber combines in one unit the concentration of black-liquor with the collection of salt cake fume. Its complete dependability and unusually high efficiency have been thoroughly tested in service for more than three years.

Companies have chosen B&W Recovery Units, equipped with Venturi Evaporator-Scrubbers, for greater efficiency in their black-liquor recovery operations. Whether your mill requires this combination or another, B&W can provide the recovery system that *best* meets your requirements. The Babcock & Wilcox Co., Boiler Division, 161 East 42nd Street, New York 17, N. Y.

VENTURI-EQUIPPED B&W Recovery Units

(in operation and on order)

Thilmany Pulp & Paper	Northwest Paper
D. M. Bare Paper	Mead Corp. (Lynchburg)
Western Kraft	Gulf States Paper
Potlatch Forests	National Container
Watervliet Paper	Buckeye Cellulose
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Southern Kraft Division
International Paper Co.—4 Plants

ADVANTAGES

of the B&W Venturi Evaporator-Scrubber

- Simple to operate
- Low in First Cost
- Increases Overall Thermal Efficiency
- Reduces Maintenance Requirements
- Continuous, High, Fume Collection Efficiency
- Minimum Space Requirement
- Reduces Multiple-Effect Evaporator Load



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...in your filler grades?

The answer may be a higher grade of filler clay. HUBER's X-43 is produced under rigid coating clay specifications. It has been successfully used in several mills for upgrading finished sheet quality—at minimum cost. Its fine particle size and higher brightness make it an ideal filler in cases where lower cost pigments fail to do the necessary quality job for you.

Send for your sample of HUBER X-43 and *try it*.

Specifications for X-43:

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Particle Size . . . 78 - 79% under 2 microns
Retention . . . in most cases comparable to
the coarser filler clays
Physical Form . . . Available in lump or
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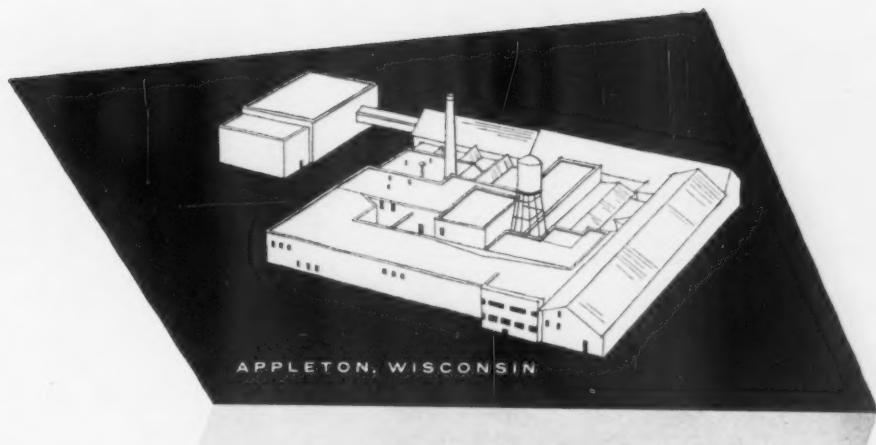


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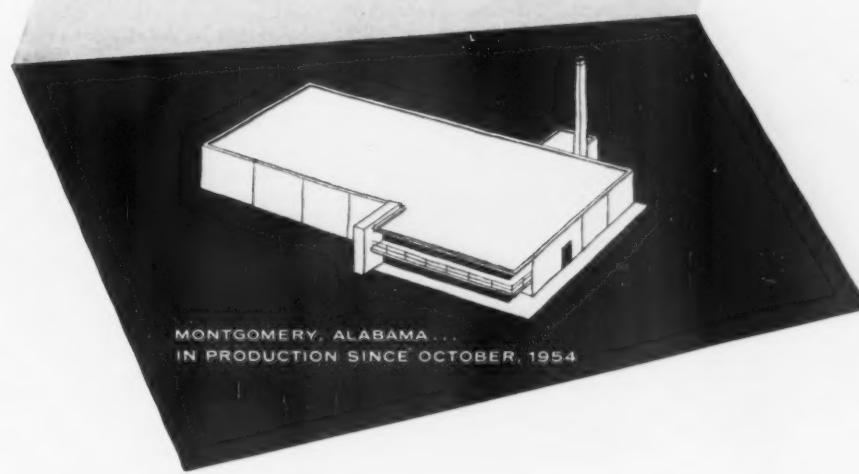
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Foresight....to anticipate changing
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MR. ALEX PANCRIZI (left), Pisa Univ. (Italy) graduate, Chief Chemist, Eastern Wine Corp., Bronx, N.Y. (Right), Michael De Piano, N.Y. representative, Cooper Alloy Corp.

PANCRIZI OF CHATEAU MARTIN (Eastern Wine Corp.) tells why he specifies "Cooper Alloy Only" on stainless steel valves and fittings

Q. Mr. Pancrazi, why have you changed to stainless steel valves and fittings at Chateau Martin?

A. To assure product purity. Other metals can cause minute contamination reducing clarity and brightness; stainless steel does not.

Q. What valve model do you find most suitable?

A. After extensive testing, we picked a renewable-disc inside-screw globe valve—Cooper Alloy only.

Q. Why "Cooper Alloy only"?

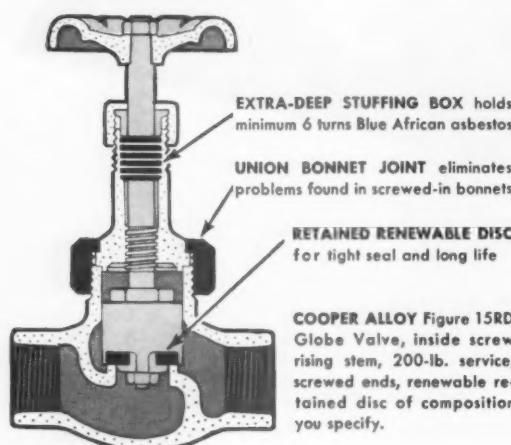
A. Because of three features I find combined nowhere else: renewable retained disc; union-bonnet construction; and extra-deep square-compression stuffing box.

Q. Why is each of these features important?

A. Soft disc gives better seal; retention in metal jacket prolongs its life. When disc replacement is needed, union-type bonnet eliminates difficulties normally found in screwed-in bonnets, removes another threaded joint from product contact. Extra-deep stuffing box with unique square compression reduces maintenance, gives tighter seal at stem.

Q. Don't any competitive valves possess these features?

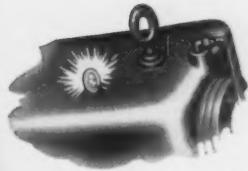
A. Not one has them all. That's why, to maintain our product contamination-free and to reduce maintenance costs, we insist on "Cooper Alloy only."



YEARS AHEAD IN DESIGN SUPERIORITY! No matter what your valve type—globes, gates, angles, checks, or Y's—the Cooper Alloy model's outstanding design features will be important to you. Cooper Alloy, with 35 years of pioneering experience in stainless steel, does not merely adapt existing brass and iron valve patterns; it creates valves *designed to be cast in stainless!* Check the special design features of valve shown at left.

As the little CA man below is saying: "*You Can Tell A Cooper Alloy Valve As Far As You Can See It!*" Write today for your copy of our folder "Design Factors In Stainless Steel Valves." The Cooper Alloy distributor near you will be glad to show you the complete line of Cooper Alloy valves and fittings, and their advantages. He can serve you promptly from local stocks.

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Corporation • Hillside, New Jersey
VALVE & FITTING DIVISION
THIRTY-FIVE YEARS OF STAINLESS STEEL PIONEERING



To demonstrate absence of vibration, a quarter was placed on the Cleveland unit. It remained upright through continuous clutching and declutching cycles and was still standing next morning after an overnight run-in test. Drive pictured at left was built by the Patton Mfg. Co., Springfield, O.

CLEVELAND-equipped mill drive offers vibration-free operation

IN a paper mill it is important that the output shaft of the gear reducer deliver smooth power to the paper-making machine. If this is not the case, the very sensitive draws between sections of the machine will not be maintained and the sheet of paper will break, causing an appreciable production loss.

In this new machine drive, smooth vibration-free power delivery is insured by its rugged transmission unit—a Cleveland Worm Gear Speed Reducer. Both drive makers and users know from years of experience that any Cleveland will transmit power from motor to its driven machine smoothly, quietly, continuously, dependably.

So wherever you need compact, right-angle speed reducers that will serve dependably under all conditions, specify Cleveland, the pace setter in power transmission since 1912.

Write for Catalog 400 and the name of our representative near you. The Cleveland Worm and Gear Company, 3268 East 80th Street, Cleveland 4, Ohio.
Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.



SCAPA
the originators of
Cotton Dryer Felts
woven with
Synthetic Reinforcement

U.S. PATENTS APPLIED FOR
Five years of experimentation—laboratory
'S'-Type Reinforced Cotton Dryer Felts.
They have exactly the right proportion of
synthetic and cotton, scientifically combined.

They are out-performing regular Cotton dryer felts, averaging
50% longer runs, and in some cases 100%.

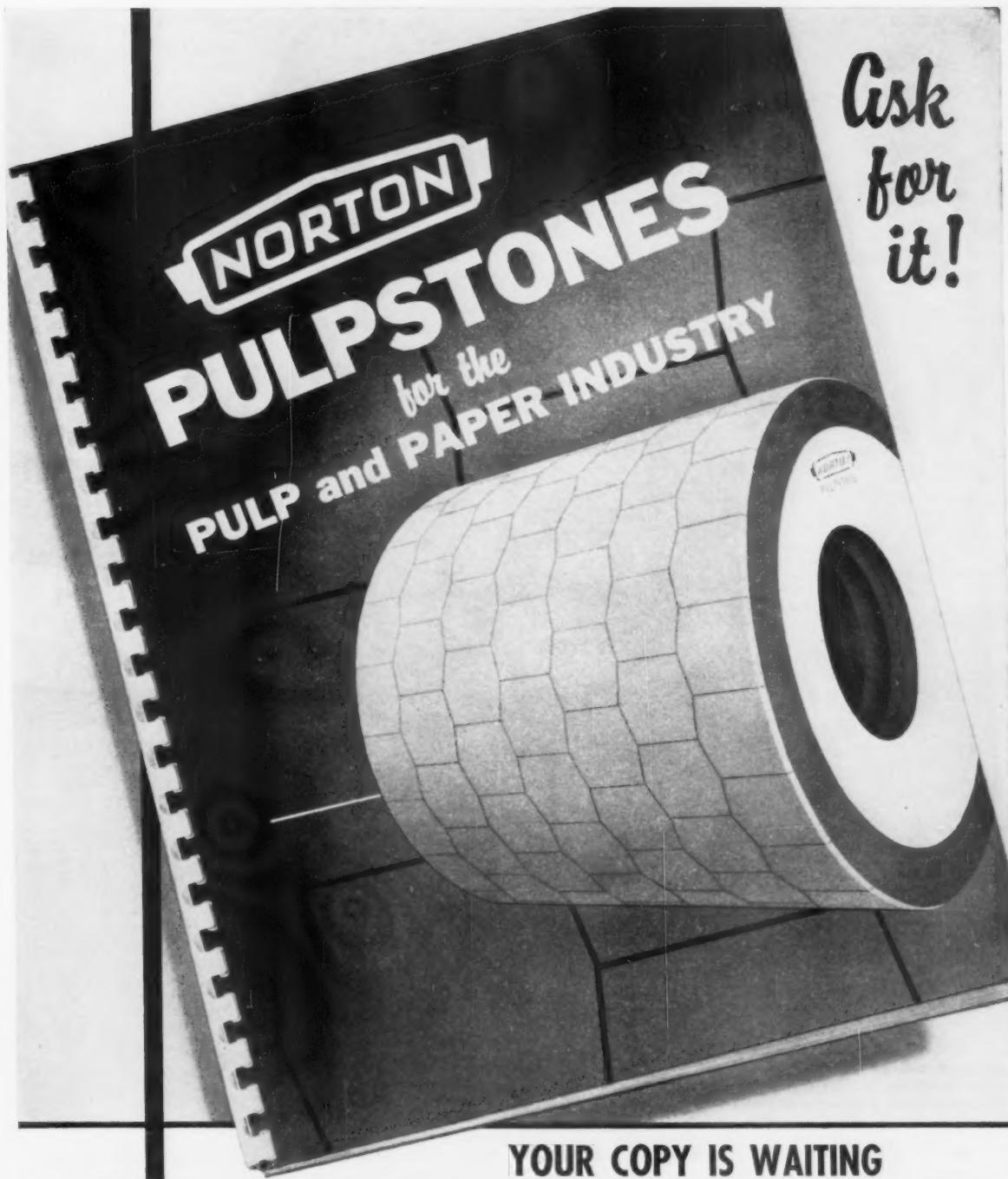
SCAPA Dryer Felts are
running all over the world!

Can be furnished with our famous
GREEN DACRON EDGE
when desired (U. S. PATENT 2,612,190).
These reinforced edges of pure,
spun Dacron will outwear the felt,
under the most severe conditions.

Morey Paper Mill Supply Company
309 SOUTH STREET, FITCHBURG, MASSACHUSETTS

Sole U. S. Agents for

SCAPA DRYERS, INC.
WAYCROSS, GEORGIA



YOUR COPY IS WAITING

NEW - 32 pages of useful information on Norton Pulpstones and their operation. Typical subjects covered are: Stone Construction • Receiving, Storing and Installing • Centering • Gaskets • Starting-up • Dressing and Burring • Stone Immersion • Load and Cylinder Pressure • Damage Prevention. Many pages of useful tables and charts, too. Send coupon for your copy — no charge nor obligation.

Norton Company, Worcester, Mass.

Please send to me your new catalog on Norton Pulpstones.

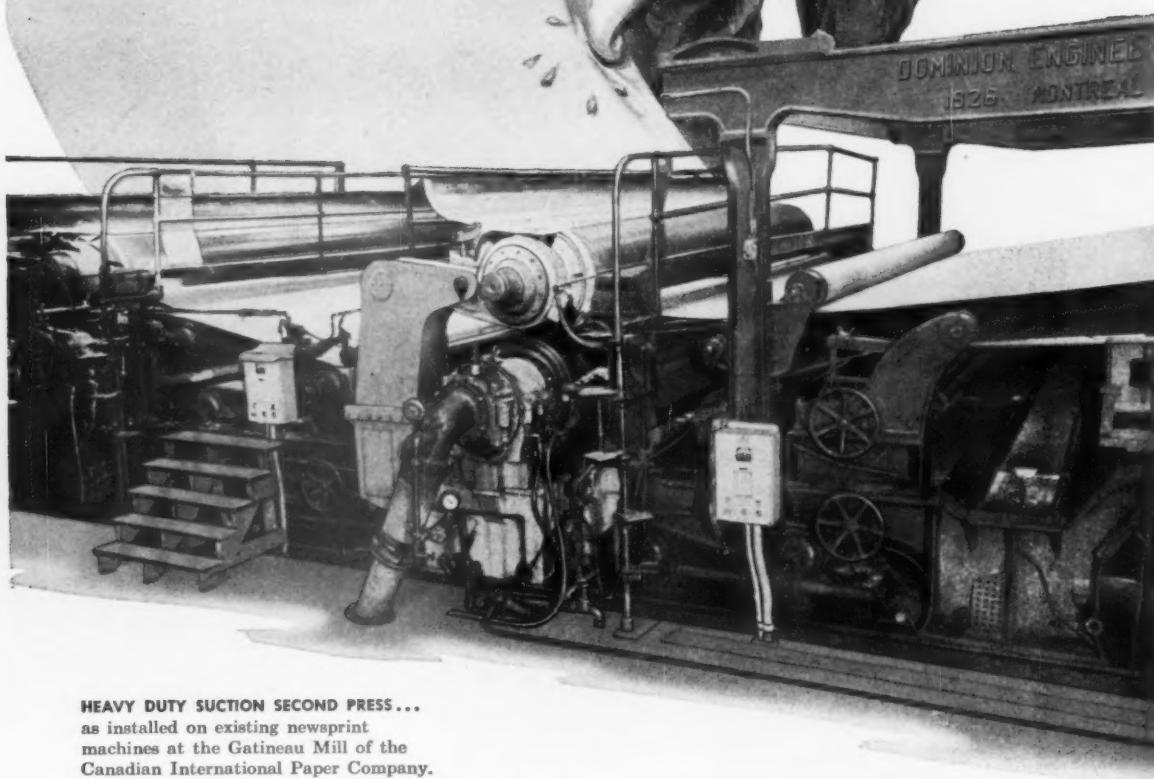
Name _____

Title _____

Company _____

Address _____

The cheapest way to remove
water from the sheet
is BEFORE
it enters the dryers!



HEAVY DUTY SUCTION SECOND PRESS...
as installed on existing newsprint
machines at the Gatineau Mill of the
Canadian International Paper Company.

The use of corrosion resistant steel shells for rubber covered suction press rolls has made possible higher nip pressures and the use of larger diameter granite top press rolls and oil hydraulic loading. These improvements also provide a more compact arrangement and easier control. After the installation of this unit, a comparison of the new moisture condi-

tions with those of the original second press showed an increase in water removed of more than half. This results in a sheet entering the dryers about 2% more dry—that is, with 9% less water to be evaporated. A considerable advance in operating efficiency with lower production costs has thus been obtained.



DOMINION ENGINEERING
COMPANY LIMITED
PAPER DIVISION
MONTREAL TORONTO WINNIPEG VANCOUVER



for stronger paper...

CONSOLIDATED ALUM

High tonnages of Consolidated Alum are used in feedwater and stock treatment by southern, southwestern and western paper mills. Consolidated, now a division of Stauffer Chemical Company, serves a 20-state area and Mexico with high quality Alum via tank car, tank truck, motor

freight and pipe line.

Bulk or bag, liquid or dry, Consolidated is a fast, dependable source of paper grade Alums. Write for complete information on nearest point of shipment and rate-and-price data. You'll like doing business with Consolidated.

CONSOLIDATED CHEMICAL INDUSTRIES

DIVISION OF STAUFFER CHEMICAL COMPANY



640 ESPERSON BUILDING
HOUSTON 2, TEXAS

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BLEACHED SULPHITE WOOD PULP



dissolving
and paper grades
shipped
in bales or
rolls

For further details, write or phone

COLUMBIA CELLULOSE
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Pulp Mill — Prince Rupert, B.C.

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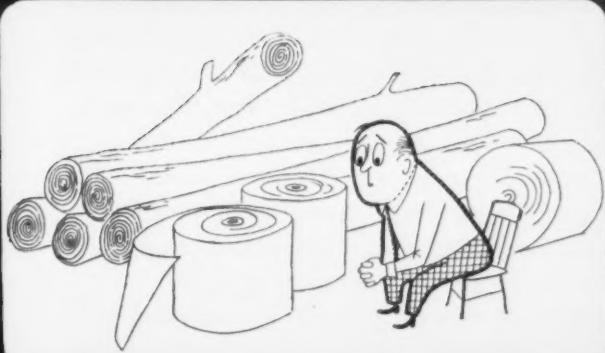
part of
Chemcell
CANADIAN CHEMICAL & CELLULOSE COMPANY, LTD. 



Planning a new mill?



Design and construction problems are piling up.



Sure, you have good engineers, but these problems are an added burden.



—and your staff just isn't big enough.



Solution: Call in Lummus with its army of expert engineers.



You'll get just the job you want at minimum capital investment.

This is the situation in very simple terms. But the basic truth is there. Building a pulp and paper mill is more than a "do-it-yourself" project. Lummus has built over 700 processing plants throughout the world. When you are ready to build your next plant, you can call in thousands of trained men—without adding to your payroll—by calling in Lummus. And remember, your process "secret" is safe with half-century-old Lummus.

THE LUMMUS COMPANY
385 Madison Avenue, New York 17, N. Y.



ENGINEERS AND CONSTRUCTORS FOR INDUSTRY

NEW YORK • CHICAGO • HOUSTON • THE HAGUE • LONDON • MONTREAL • PARIS



Is paper quality important to you, too?

The one certain way of getting absolutely uniform quality starches for your better papers is by using Hercules starches. One batch of any specific type of Hercules starch is precisely identical with every other batch of the same type. The reason for the perfect quality control is that production of Hercules brand corn starch is under 100% automatic instrument control in an exclusive, new process. Results are precise and your starch requirements are met exactly.

Precision instrument quality control means less spot checks for you to control your product uniformity. But even more important, you will receive far fewer rejects from your customers. Hercules starches are equally applicable as beater additives, in "off the machine" coating or calender sizing.

Ask the man from Corn Products, he can help with product information and engineering assistance. Whatever your paper-making problem, he will be able to supply you with the technical assistance you require.

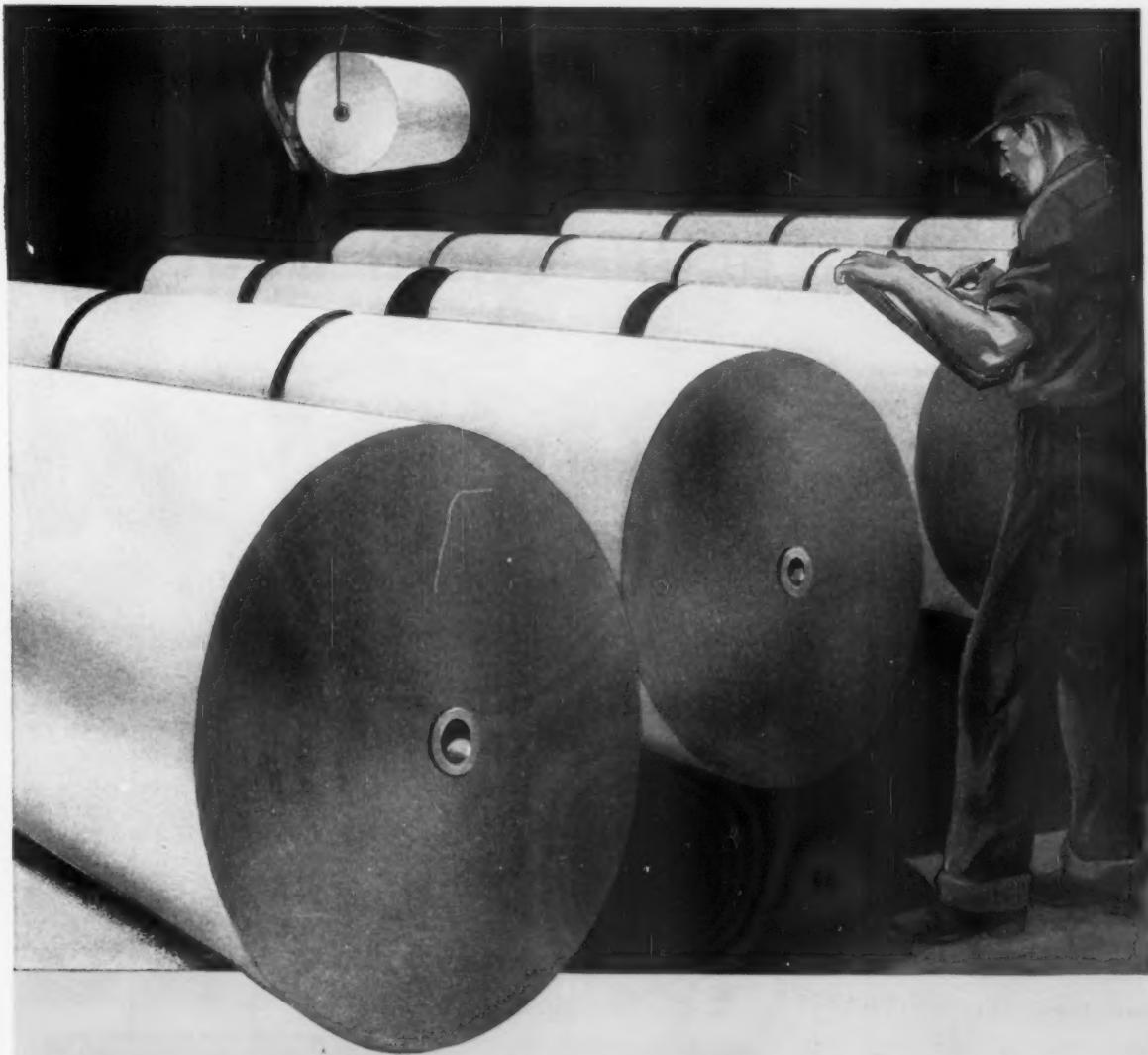
Hercules
BRAND
CORN STARCH



CORN PRODUCTS SALES COMPANY

17 Battery Place, New York 4, N. Y.

Corn Products makes these famous brands of starches and gums for the paper industry:
**HERCULES • GLOBE • EAGLE • FOXHEAD • AMIJEL • CORAGUM • TEN-O-FILEM • CLARO STARCHES
EXCELLO AND GLOBE DEXTRINES • LAM-O-DEX GUMS**



YESTERDAY

... 16.9 man hours per ton of paper

TODAY

... 12.3 man hours per ton of paper

In the period, 1947 to 1956, the Paper Industry reduced the number of man hours per ton of paper from 16.9 to 12.3 — a 25% reduction. Improved machinery and more efficient plant operation made the difference.

Long range, the outlook for the paper industry is bright. Per capita consumption of paper is expected to reach 450 to 460 lbs. by 1960, compared to 435 lbs. in 1956. That's why so many leading mills are

talking to Puseyjones about machine improvements and new machines.

If you want to add a new machine . . . or rebuild an old one, Puseyjones engineers can show you what's ahead in high speed papermaking machinery. Fourdrinier, Yankee, and Cylinder Machines built by Puseyjones are setting the pace today in improved sheet quality and higher production for many of the industry's leaders. Let's talk it over.



THE PUSEY AND JONES CORPORATION

Established 1848 : : Builders of Paper-Making Machinery

Fabricators & Welders of all classes of Steel and Alloy Products

Wilmington 99, Delaware, U.S.A.

... for superior paper
at no extra cost

use



Starches

the complete paper mill line

There's an OK Brand product especially formulated for every paper mill operation requiring starches and adhesives ... and there's no extra cost for these top-quality OK BRAND products.

There's no extra cost for Hubinger Technical Service either. If your mill needs a special starch product, phone or write for a Hubinger paper-starch technical service representative. He will be glad to help you solve your starch problems. You'll find him OK too.

	Wet-End Additives	Press & Tub Sizes	Coating Adhesives	Calender Sizes
KEOJEL				
KEOZYME				
KEOFILM				
KEOCHLOR				
KEOCOTE				
PEARL				
KEOGUM				

The Hubinger Company

KEOKUK, IOWA



WHAT'S SO DIFFERENT ABOUT THIS FELT?

It would take an expert to set this felt apart from any other.

You cannot see, for instance, the hours of detailed field study...the days of painstaking manufacture...and the years of experience that have been woven into it. And, unless you've toured Huyck's plants, you wouldn't know that its construction was made possible only by continuing design and engineering conferences...careful selection of materials...and strict process control in every phase of production.

Of course, the best way to see how Huyck's advanced-engineered felts pay off in terms of increased production and lower cost is to use them.



*F. C. Huyck & Sons, Rensselaer,
N. Y.; Aliceville, Ala.;
Peterborough, N. H.;
Cavendish, Vt.*

*In Canada: Kenwood Mills Ltd.,
Arnprior, Ontario.*

★HUYCK FELTS INDUSTRIAL FABRICS

Latest Mill Results	SEPARAN 2610 lb. / ton	CLAY lb. / ton	TiO ₂ lb. / ton	ASH %	OPACITY %	NET SAVINGS \$ / ton WITH SEPARAN 2610
55 lb. ENVELOPE	NONE	530	0	7.3	88.0	
	0.5	310	0	10.3	90.2	4.50
60 lb. OFFSET BOND	NONE	550	30	12.2	92.0	
	0.5	400	30	13.7	92.0	2.00
25 lb. MACHINE COATED CARTON WRAP	NONE	50	150	12.2	77.0	
	0.75	50	125	13.2	76.0	5.50
50 lb. OFFSET BOND	NONE	370	145	9.6	89.0	
	0.6	145	100	12.6	90.5	12.00

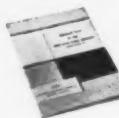
Separan 2610 saves \$2.00 to \$12.00 per ton of paper

Tabulated above are mill results obtained on various papers with Separan 2610 as a filler retention aid. These savings tell only part of the story . . .

A synthetic flocculant of constant uniformity, Separan 2610® is proving the answer to many problems in pulp and paper manufacture. It is truly a revolutionary flocculant—easy to prepare and apply—requiring no preservative. It's effective over a wide pH and temperature range, is non-corrosive, and presents no hazard in normal use.

For your further evaluation of Separan 2610, a more complete and expanded report has been prepared titled "Separan 2610 in the Pulp and Paper Industry". In addition to

filler retention, it reports on how this new Dow flocculant is saving money and improving other mill operations . . . in flotation type save-alls, white liquor or bleach liquor clarification, white water clarification and raw process water treatment. For your copy of this booklet, and/or a sample of Separan 2610, write THE DOW CHEMICAL COMPANY, TECHNICAL SERVICE AND DEVELOPMENT, Midland, Michigan, Dept. SC 1317D.



YOU CAN DEPEND ON



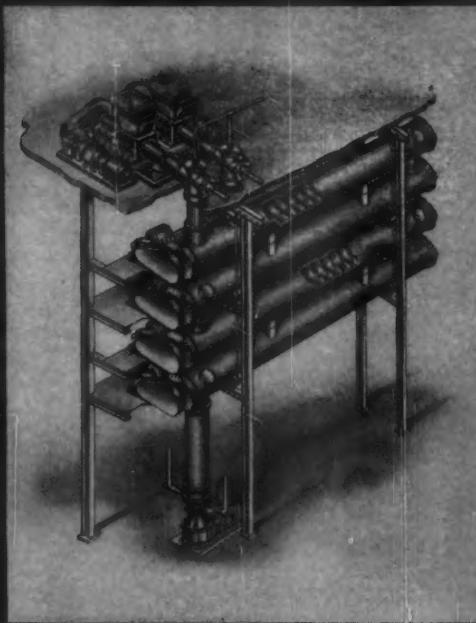
CHEMI-PULPERS...

Continuous Digesters produce

over 1 million tons of pulp every year

The success of the Chemi-Pulper®, the Continuous Digester built by the Pandia Division of The Black-Clawson Company, is reflected in these production figures.

Based on a 350 day operating year, Chemi-Pulpers in operation throughout the world are producing 1,204,000 tons of all kinds of pulp a year. Tonnage of Chemi-Pulpers now being built adds up to 263,200.



Approximately 86% of the operating and "in process of building" capacity is in the United States and Canada.

Get the full Chemi-Pulper story from Pandia—ask for latest Chemi-Pulper Bulletin No. PC-20.

	Present Production	Tonnage Now Being Built
Felt Pulps (Roofing and Flooring Grades)	420,000	17,500
Building Board Pulps	94,500	35,000
Straw Pulp		24,500
Bagasse Pulp	5,250	
Corrugating Board Pulps	519,750	105,000
Bleached Hardwood		
Neutral Sulphite Pulps	31,500	
High Yield Kraft & Special Pulps	63,000	46,200
Bleached Kraft Pulps	70,000	35,000
Totals	1,204,000	263,200

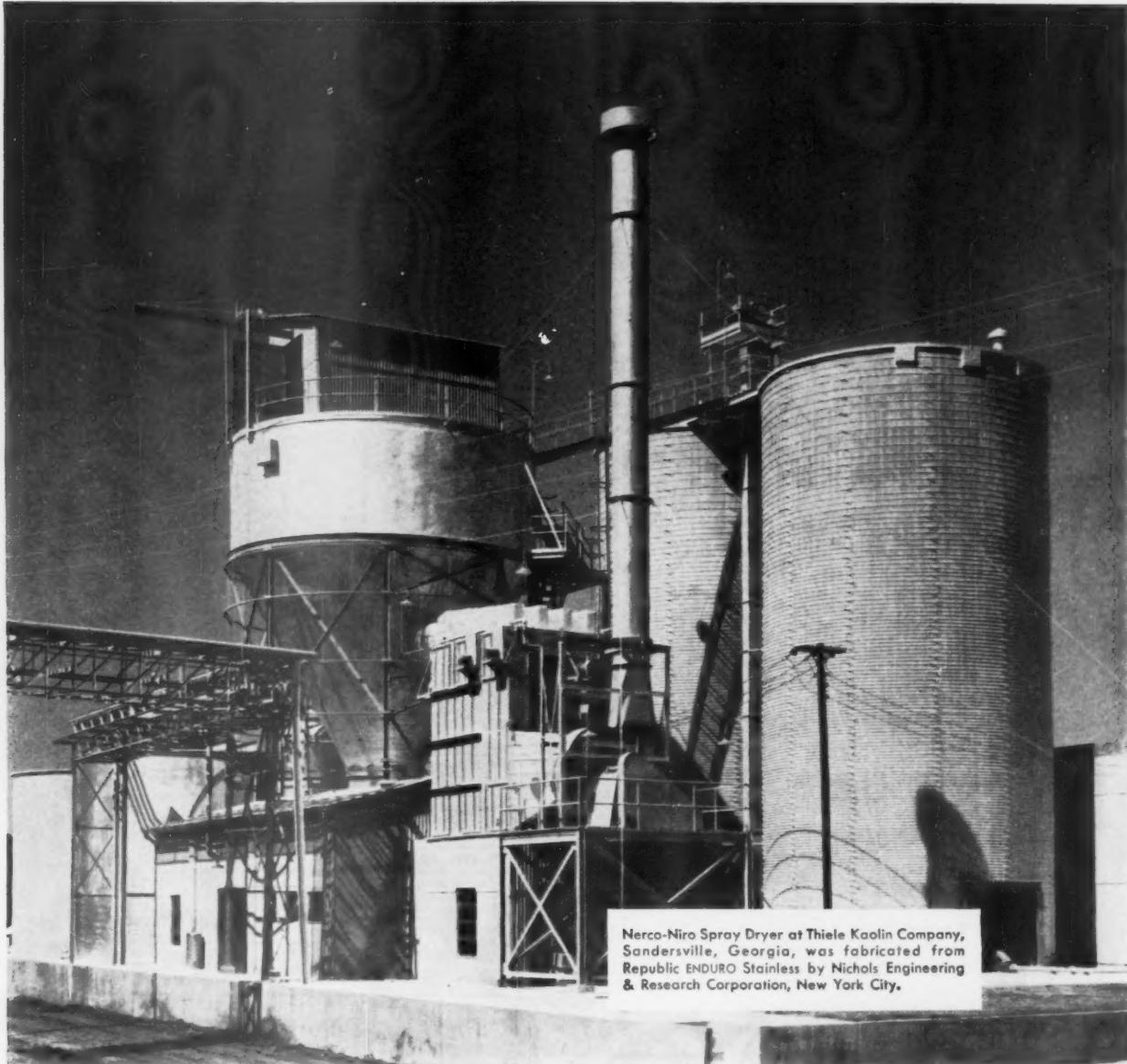
THE BLACK-CLAWSON COMPANY
PANDIA DIVISION, HAMILTON, OHIO



Stock Preparation Equipment
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Spray Drying in



Nerco-Niro Spray Dryer at Thiele Kaolin Company,
Sandersville, Georgia, was fabricated from
Republic ENDURO Stainless by Nichols Engineering
& Research Corporation, New York City.

REPUBLIC



World's Widest Range of Standard Steels

STAINLESS STEEL

protects quality and purity of Kaolin paper coating clays

Demand for paper coating clays from Georgia's famous Kaolin Hills is growing at a rapid rate. Used in formulas for conversion and machine-coated papers, last year's consumption was over 500,000 tons and is expected to reach 1,000,000 tons by 1960.

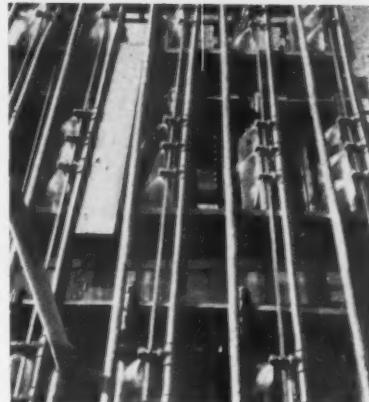
Kaolin producers are utilizing the advantages of processing equipment fabricated from Republic ENDURO Stainless Steel, to keep up with demand and to maintain high product quality and purity.

A good example of this type of equipment is the cone-shaped spray dryer shown at left. A cake clay slurry containing about 40% moisture is pumped into the dryer, where it is flash dried in about a second. The resulting product, ready for bagged or hopper-car shipment, contains less than 1% moisture. And, because it is never over-dried or calcined, and comes in contact only with stainless steel, its quality and purity are maintained at the highest level.

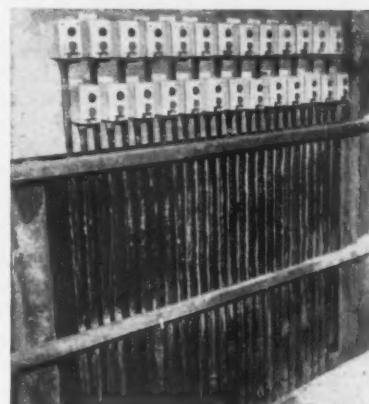
There is no danger of metallic contamination. ENDURO Stainless Steel is inert to most chemicals and chemical compounds. It does not add unwanted elements to products. It never takes anything away. ENDURO is easy to clean and keep clean because it's solid stainless steel. There's no applied surface to crack, chip, peel or wear away. Its smooth, hard, sanitary surface offers little foothold for contaminants.

Strength, heat-resistance and corrosion-resistance are other advantages of ENDURO-made processing equipment like the dryers mentioned above. These units, designed to operate at temperatures from 1000-1150°F, are made in thinner, lighter sections because of ENDURO's extremely high strength-to-weight ratio. They resist scaling at high temperatures. Possess high creep strength. Provide substantial savings in both maintenance and replacement costs.

These benefits can be applied to your paper-making equipment. Republic field metallurgists are ready to work with you and your equipment supplier in applying the many available Republic ENDURO Stainless Steel analyses to best advantage. No obligation. Just mail the coupon.



PROTECT PROCESS AND WASTE LINES from corrosive damage by installing Republic SRK corrosion-resistant plastic pipe. When used within its temperature and pressure limitations it is ideal for many applications in paper, chemical and other processing industries. It is highly resistant to most corrosive liquids and gases. Being extremely tough, it will absorb terrific punishment without breaking or shattering. Republic SRK is lightweight, easy to handle. Lengths are joined by simple solvent-welded sleeve-type fittings. Send coupon for details.



PROTECT ELECTRICAL SYSTEMS against the corrosive action of chemical fumes with Republic Dekoron®-Coated Electrical Metallic Tubing. This installation of Dekoron-Coated E.M.T. replaced ordinary conduit that corroded out every five years. This easily installed electrical raceway gives you the double protection of a polyethylene coating over a galvanized finish. Moisture-tight, corrosion-protected joints are made by wrapping the threadless connectors and couplings with plastic tape. Send coupon for Booklet DEK-3.

STEEL

and Steel Products

REPUBLIC STEEL CORPORATION

Dept. C-3585
3206 East 45th Street, Cleveland 27, Ohio

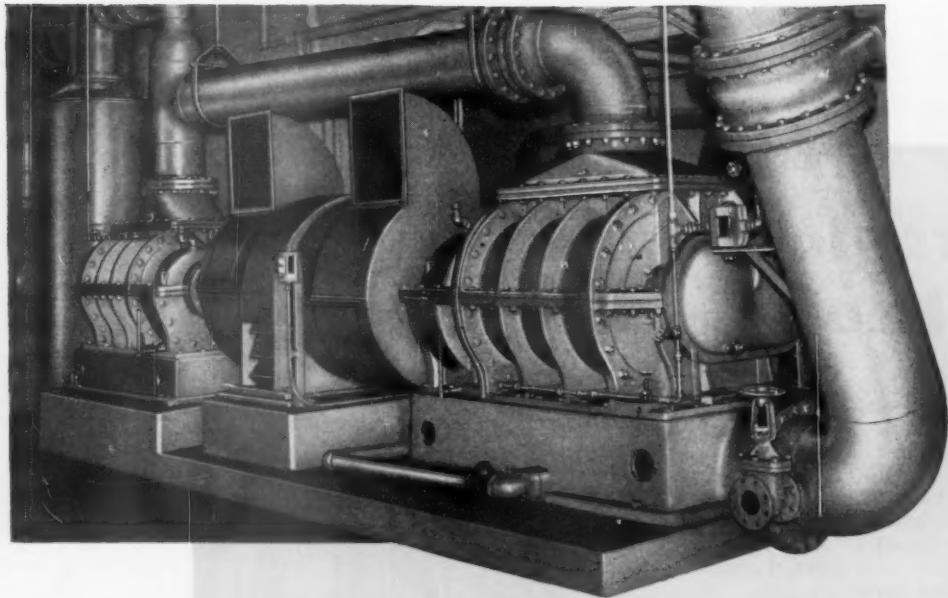
Please have a stainless steel metallurgist call.
Send more information on:
 ENDURO® Stainless Steel SRK Plastic Pipe
 Dekoron-Coated E.M.T.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____



**For the world's largest
Yankee tissue machine...**

R-C Positive
Displacement
Vacuum Pumps
purchased for
this installation

- Two 16 x 40 single-stage pumps
- One 14 x 35 single-stage pump
- Two 20 x 40 x 20 x 16 two-stage pumps

The 14 x 35 single stage unit is direct-connected to a special shaft extension from one of the 16 x 40 units to make a two-stage compound pump.

For evidence of how other leading industrial users benefit from these advantages, write for Bulletin 50-B-13.

R-C

**Vacuum Pumps keep
production rolling at 3000 fpm**

At Crown Zellerbach Corporation's St. Helens mill in Oregon, the world's largest Yankee tissue machine, with a 258-inch wire, is producing 100 to 120 tons per day at a speed of 3000 fpm.

To provide the required vacuum for the pressure roll, suction wire boxes, wringer roll, suction couch, pickup and felt conditioners, there are seven Roots-Connersville vacuum pumps to supply approximately 33,000 cfm of air at 10 to 20" Hg vacuum.

Five important operating factors have proved the performance of these R-C Positive Displacement Vacuum Pumps:

Reduced horsepower at higher speeds (600 rpm and up) creates power savings up to 25% and far lower first cost of motors.

Single-stage or two-stage units in capacities for all requirements.

Proved reliability and low maintenance with no internal contacts or excessive wear and freedom from down-time and maintenance.

Minimum sealing water from 4 to 40 gpm, unaffected by water temperature.

Small floor space with less expensive foundations and lower cost per cubic foot of capacity.



ROOTS-CONNERSVILLE BLOWER

A DIVISION OF DRESSER INDUSTRIES, INC.

457 Willow Ave., Connerville, Indiana. In Canada—629 Adelaide St. W., Toronto, Ont.





**new small instruments in fiber glass cases
indicate . . . transmit . . . control temperature or pressure**

NOW . . . instruments as corrosion-resistant as the equipment they control! Every instrument in Fischer & Porter's new 1450 Series is housed in a fiber glass reinforced polyester case resistant to acids, alkalis, salts, solvents, dust, and weather. You can place indicators, transmitters, and controllers wherever you want—inside or out—without regard for corrosive fume and splash. The protection is built right into the housing . . . nothing to wear away or scratch off . . . no coatings to renew. The first such equipment available for process instrumentation, Series 1450 brings a new flexibility and freedom to instrument installation.

There's no way for corrosive atmospheres to reach the working instrument. Every exposed part is either plastic or 316 stainless steel. And a polyvinyl chloride gasket provides a positive seal against dust and moisture entry.

F&P has engineered the unique new 1450 Series housing for operation and maintenance ease. The entire instrument can be removed from the case if desired. Zero adjustment and range changes are easy. A plug in the removable door provides access to the adjustment screw for the optional external set point.

Field tested over a one year period, the 1450 Series is available NOW on four week delivery schedules.

For complete data write Fischer & Porter Co., 2147 County Line Road, Hatboro, Penna.

SERIES 1450

CORROSION-PROOF INSTRUMENTS

Temperature Range:

minus 400F to plus 1000F.

Pressure Range:

30" Hg vacuum to 5000 psi
As pneumatic receivers, 1450 instruments accommodate 3 to 15, 3 to 18, or 3 to 27 psi signals.

Instrument Options:

Single indicator • dual indicators • single indicator with dual alarms • indicating controller with any mode of control • indicating transmitter. Transmitter can provide pneumatic outputs, resistance outputs, or differential transformer outputs.

Controller Options:

- universal controller with on-off, proportional, differential gap, and manual reset
- wide band proportional
- wide band proportional plus automatic reset
- wide band proportional plus automatic reset plus derivative

Mounting:

Suitable for surface, pipe, or panel mounting. Panel cutout size is 8 $\frac{1}{4}$ " x 10 $\frac{1}{4}$ ".



FISCHER & PORTER CO.
Complete Process Instrumentation

CHAIN BELT answers your
wood handling problems...

BY GIVING YOU ONE SOURCE
FOR ALL YOUR DRIVE
CONVEYING OR ELEVATING NEEDS!

COMPLETE HANDLING SYSTEMS...

Not only does CHAIN Belt make chains, belt idlers, bearings for your power transmission, conveying or elevating needs...it also designs *complete* wood handling systems!

And why not? CHAIN Belt has over 50 years' experience supplying products and solving difficult materials handling problems for sawmills...pulp mills...softwood, hardwood, plywood plants...and other forest products industries.

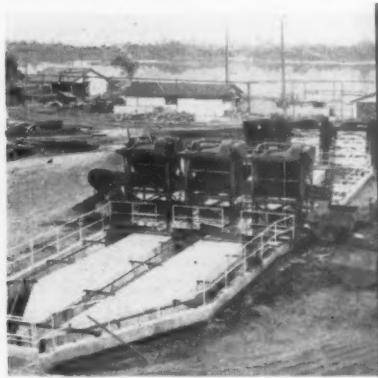
Shown here are but a few examples of handling systems that CHAIN Belt has designed or supplied components for—systems that have paid big dividends in time saved, increased capacity and lower costs.

This service of CHAIN Belt is at your disposal. It includes top-flight engineers, draftsmen and manufacturing facilities to handle every type of wood handling problem.

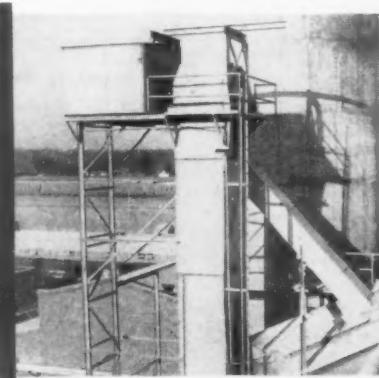
For complete information, contact your local CHAIN Belt District Office or write CHAIN Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.



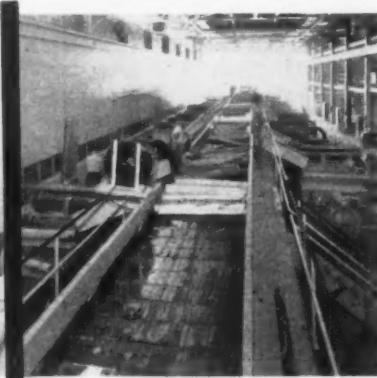
For the long haul, Rex Belt Conveyor Idlers and Chains carry barked pulp logs to the chipper. These conveyor components are big favorites because of their lasting qualities and low maintenance.



Three chain and bucket grit collectors in this paper mill log handling flume prevent floating bark, dirt and other debris from clogging and damaging water pumps. These CHAIN Belt Grit Collectors save costly repair and maintenance to the pumps and keep the closed-circuit flume system working at top efficiency.

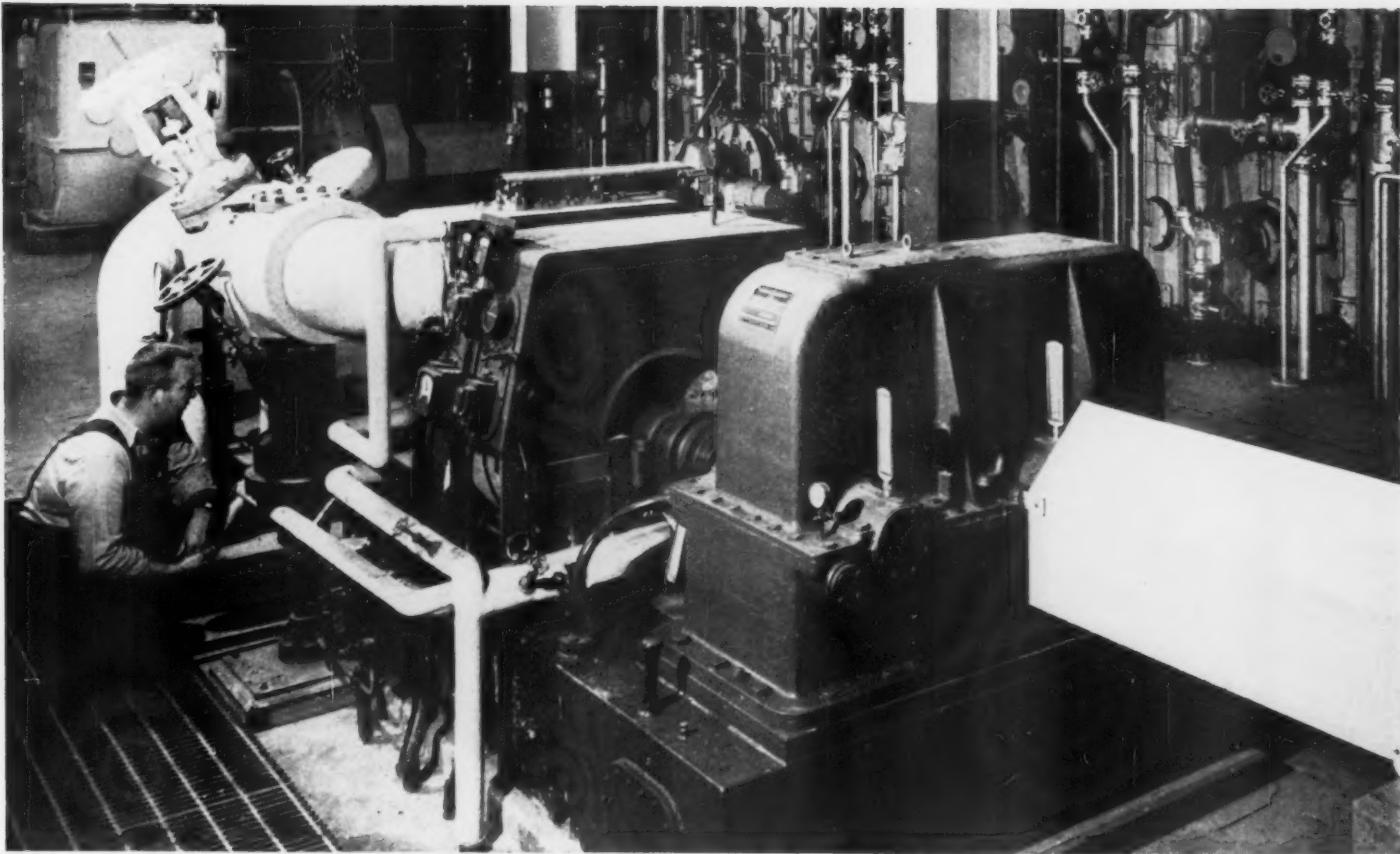


This Rex Wood Chip Elevator is especially designed for handling chips up to the top of the digester or to the screens. Special steel buckets and a high-speed belt provide capacity to handle from 12 to 15,000 cubic feet per hour! This unit assures smooth, steady flow of materials at minimum maintenance and operating cost.



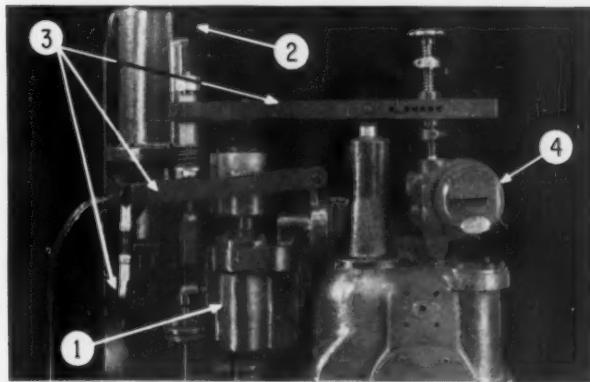
In the mill, this Rex Slat Conveyor is used for feeding barked logs to the grinders. It is 66 inches wide on 228-foot centers. The system has a capacity of 30 cords per hour. Teamed with company and consulting engineers, CHAIN Belt developed this system that has many new innovations to speed production, cut costs.

CHAIN BELT COMPANY
LEADERSHIP...through creative engineering
MILWAUKEE 1, WISCONSIN



New General Electric governing system is integral part of this paper machine turbine drive installed at the Crown Zellerbach Kraft Paper Mill, Antioch, California.

New General Electric governing system provides closer speed control for paper machine turbine drives



NEW GOVERNOR OFFERS FINER ADJUSTMENT, FASTER SPEED RESPONSE

1. Smaller primary piston doubles relay speed to meet rapid changes in load requirements.
2. Powerful secondary operating piston accurately positions steam control valves.
3. Simplified linkage system, utilizing rigid, weight-biased joints, speeds control response, needs little maintenance.
4. Two-speed motor gives finer speed adjustment, faster speed change.

The new General Electric governing system is now guaranteed to maintain line shaft speed within $\pm 1/10$ of one per cent of rated speed — 2½ times closer turbine speed control than previously offered.

COMPLETE UNIT RESPONSIBILITY for service is also provided during planned maintenance checkups since this governing system is unit-engineered as an integral part of General Electric turbine drives.

For further information on General Electric high-speed turbines and the benefits of this new governing system for paper machine turbine drives, contact your nearest Apparatus Sales Office, or write for bulletin GEA-6232, General Electric Company, Section 241-8, Schenectady, New York.*

*In Canada, contact Canadian General Electric, 107 Park St., Peterborough, Ont.

Progress Is Our Most Important Product

GENERAL  **ELECTRIC**



TOUGH ACE-ITE PLASTIC PIPE

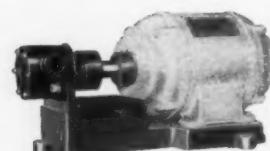
General-purpose moderately priced rubber-plastic pipe handles most common chemicals to 170 deg. F. . . . except few strong acids and organic solvents. Tough, odorless, tasteless. Rigid pipe $\frac{1}{2}$ " to 6". Bulletin 80.

FOR HOT CORROSIONS:

ACE TEMPRON
Heat-resistant nitrile hard rubber pipe handles inorganics at 250-275 deg. F. . . . also resists wide range of organic chemicals at room temperature. Sizes 1" to 8", Bulletin 96-A.

MIGHTY MIDGET

for pumping acids



Jabsco neoprene-impeller pump made of Ace hard rubber outlasts, out-pumps anything in its pressure, size and price class. Capacity from 15 gpm. at 22 ft. head to 5 gpm. at 72 ft. head. Bulletin 97-A.

SENSITIVE,
BUT KEEPS
YOUR HEAD



ACE Darling Swing Check Valve . . .

Lined with Ace hard rubber for the best in corrosion resistance. Large, straight-through flow areas. Sensitive to slight pressure differential. Non-slaming. Sizes 2" to 24". Bulletin CE-52.



ACE processing equipment of rubber and plastics

AMERICAN HARD RUBBER COMPANY
93 WORTH STREET • NEW YORK 13, N. Y.



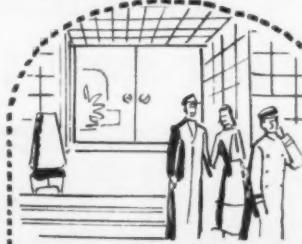
HOTEL TULLER

... featuring convenience, comfort, quality! A cosmopolitan atmosphere in home-like setting. In the center of all downtown activities. Newly decorated. Ultra modern, comfortable guest rooms . . . excellent food at moderate prices in our modern coffee shop and cafeteria.

Radio and Television in room.
Air Conditioned rooms in season.

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WITH BATH from
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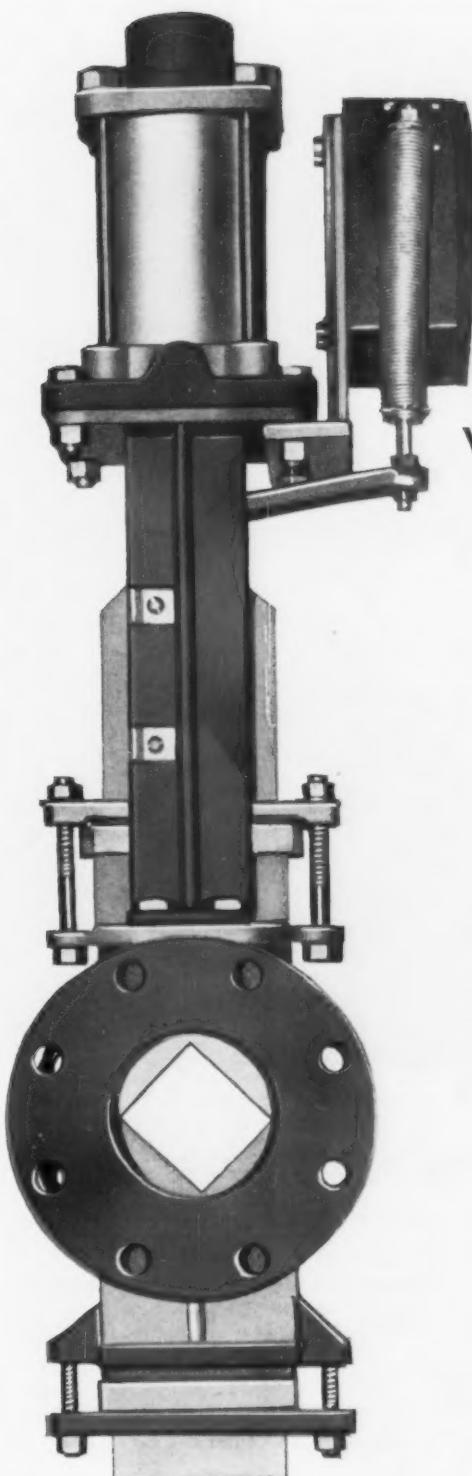
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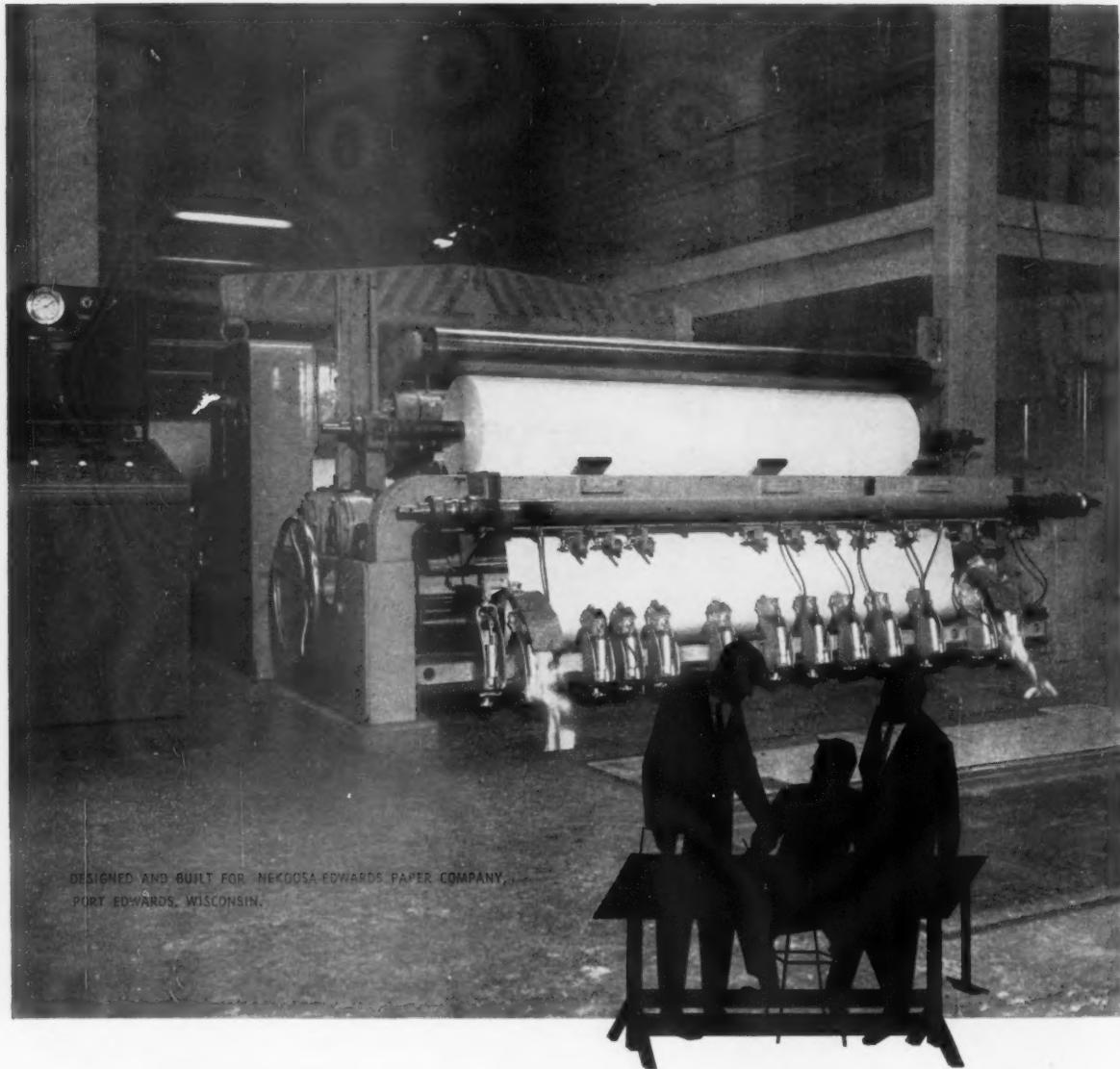
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Positive protection...unmatched durability. It's the Unibestos combination for today's most efficient and economical pipe insulation. Unibestos® is available in sectional form through 44" O.D.

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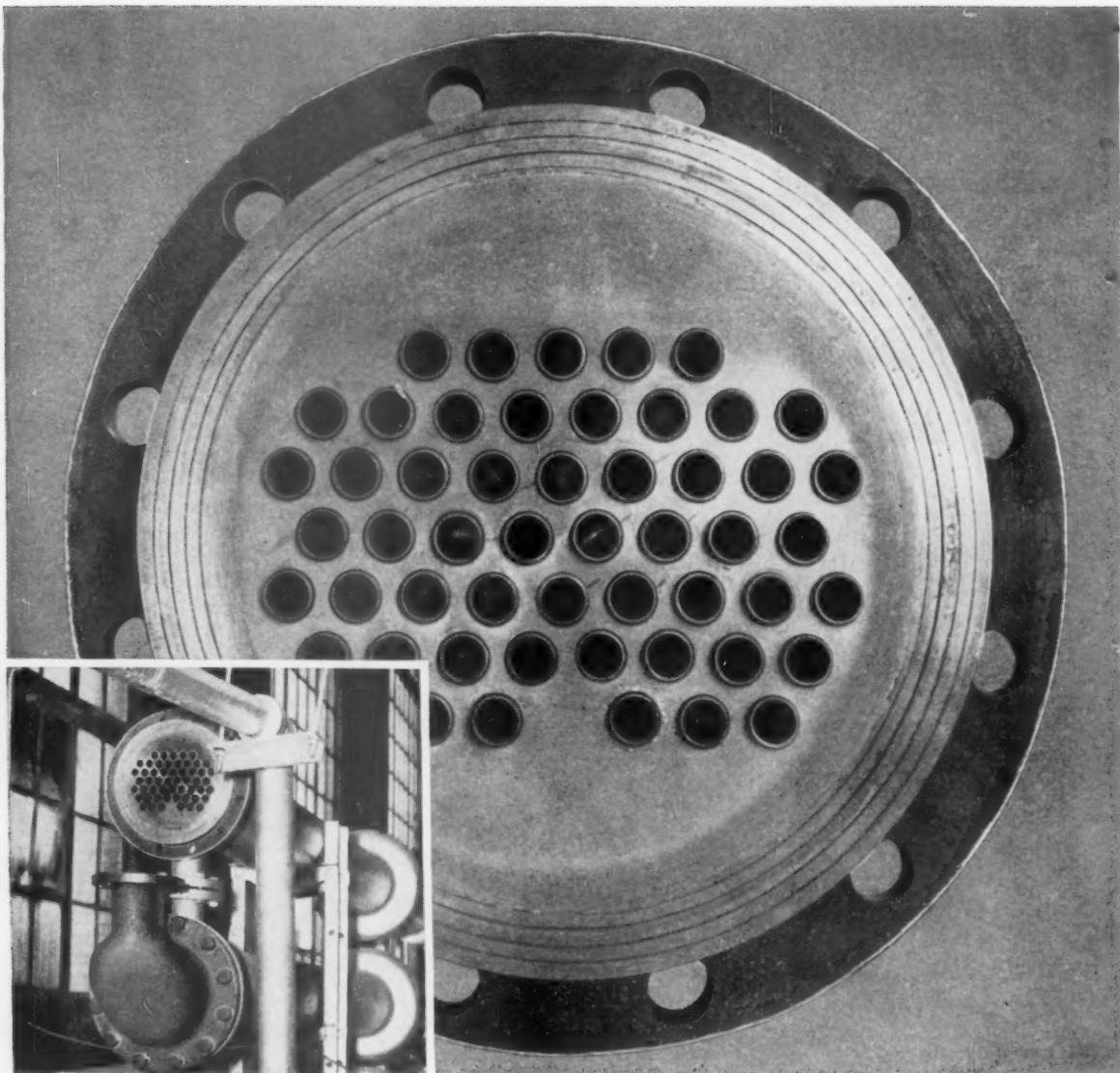
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hot SO₂ gases and vapors**

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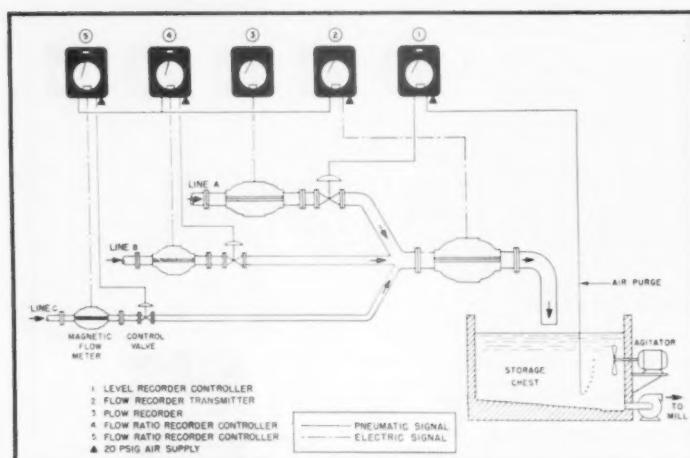
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Stocks ratioed to each other or to total flow

Above is a typical application of the Foxboro pulp stock blending system, in which each stock flow is ratioed to total flow. However, lines B and C can be ratioed to the major furnish, line A, if desired. In either case, pulp stock flows in line B and C are controlled with ratio controllers 4 and 5. Ratios are set on the controller dials. Line A then automatically supplies balance of the pulp stock required to maintain constant level in storage chest. Any ratio easily altered by changing dial setting on proper ratio controller.

Here at last is a problem-free method for continuous pulp stock blending. Based on the Foxboro Magnetic Flow Meter, this system has no line restrictions or pressure taps — nothing to foul or plug up — nothing to interfere with sustained accuracy of flow measurement.

Centralized control of any number of pulp stocks. One man easily controls the entire blending operation by the simple adjustment of ratio dials. And he can easily vary the blend *at any time* merely by changing the settings.

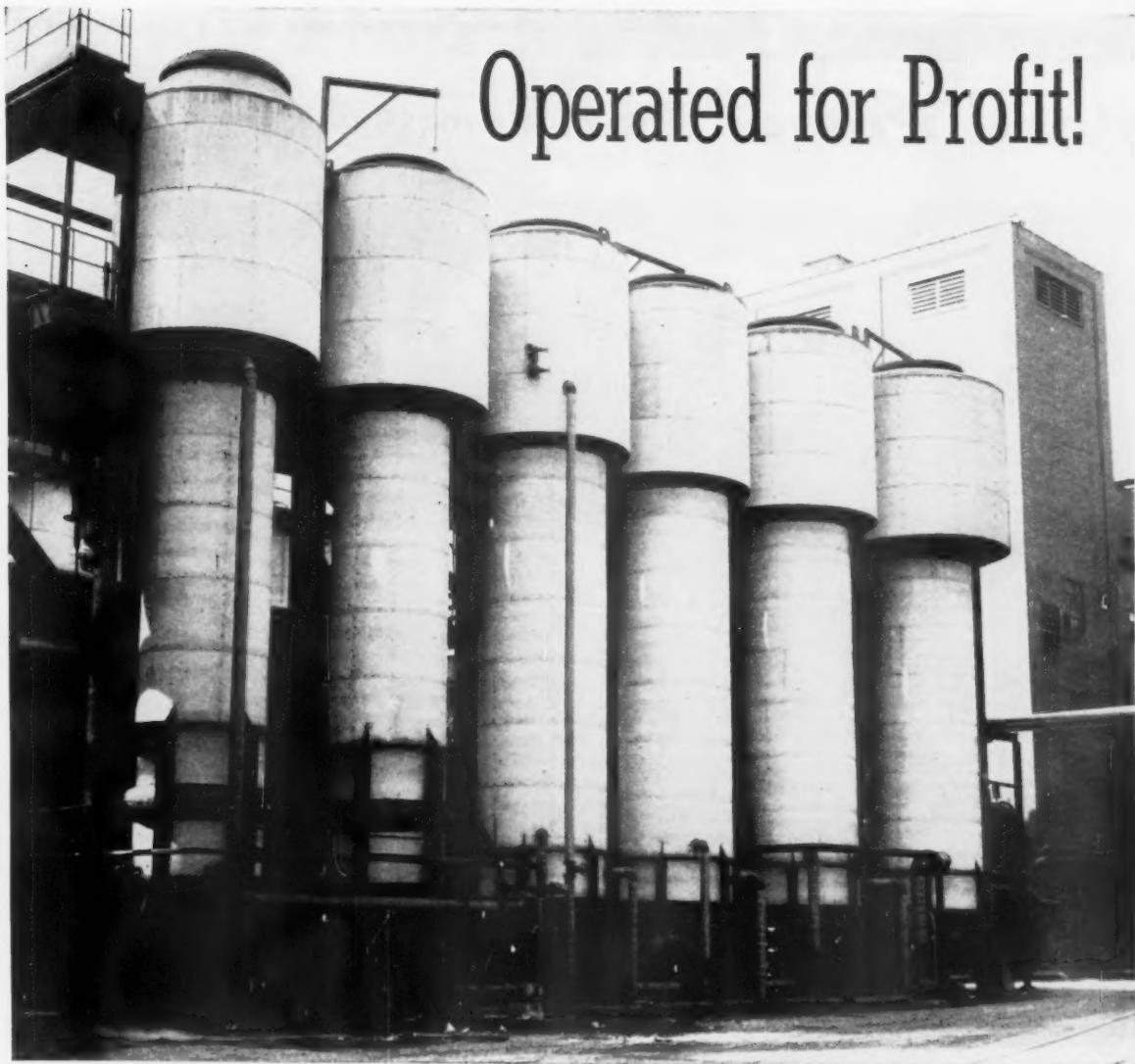
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Details on this newest application of the Foxboro Magnetic Flow Meter will be gladly furnished by your nearby Foxboro Field Engineer. Or write The Foxboro Company, 994 Neponset Avenue, Foxboro, Mass., U.S.A.

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Paper and pulp products are in great demand . . . but for a mill to operate profitably it is necessary to produce the required volume more economically. Proof of the economical operation and sound engineering of Conkey Evaporators is their many installations in new mills . . . and the repeat orders received for expanding mills.

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engineers, can help you operate for profit too. Fabricated and erected by CB&I's four strategically located plants, Conkey Evaporators can meet your most exacting requirements. Write our nearest office for further information . . . a Conkey engineer will be happy to assist you.

Above: Six body sextuple effect Conkey black liquor evaporator installed at a southern pulp mill.

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Homelite builds and sells more chain saws than any other company in the world.



An HD-16 tractor with blade roots out stumps in building a haul road. More than 16 tons of working weight, an engine developing 150 usable hp plus power-multiplying torque converter, make tough logging jobs a simple matter. Two Allis-Chalmers HD-11 crawlers and an HD-5 round out Pinkham's tractor team.



four Allis-Chalmers crawlers
CLEAR THE WAY AND KEEP THINGS MOVING
on big pulpwood operation

Tom Pinkham, Jr., is a busy logging contractor in northern Maine. Production last year at the Pinkham show totaled 50 thousand cords of pulp — plus a sizable volume of long lumber, veneer logs, cedar for rail ties, utility poles and other uses.

What does it take to operate on this scale? It takes about 200 men, 2 logging camps, 13 loading cranes, 65 haul trucks, plus the full-time use of 4 bulldozer-equipped Allis-Chalmers crawler tractors.

Chosen on the basis of satisfactory experience with earlier A-C models, Pinkham's present tractors are key machines in his year-round operation. Dur-

ing the summer they rough out haul roads to pulpwood storage stacks in the woods. When hauling starts in late fall, they're put to work removing snow and keeping roads clear and smooth.

Pinkham needs dependable performance to do this big job — and he gets it with his Allis-Chalmers tractors. Your Allis-Chalmers dealer will provide the complete story on how the many advanced-design features of Allis-Chalmers crawlers will give you the same kind of high production, increased working time and lower costs. See him soon.

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3 MINUTE UNLOADING SCHEDULE ADDS A TRIP A DAY FOR HAULERS

Fast American Crane Speeds Wood Yard Operations

Transferring pulpwood from hauler's trucks to flatcars is done in a *matter of minutes* in the Heald Division wood yard of Mead Corporation. Until an American 300 Series Self Propelled Crane was assigned to the task, it took two or three men nearly an hour to unload each truck! As a result of the time saved haulers, they can bring in an additional load to the Lynchburg, Va., yards daily! Operations in the wood yard are speeded up because the American transfers as much as 7-1/2 tons of pulpwood from truck to flatcar on every cycle.

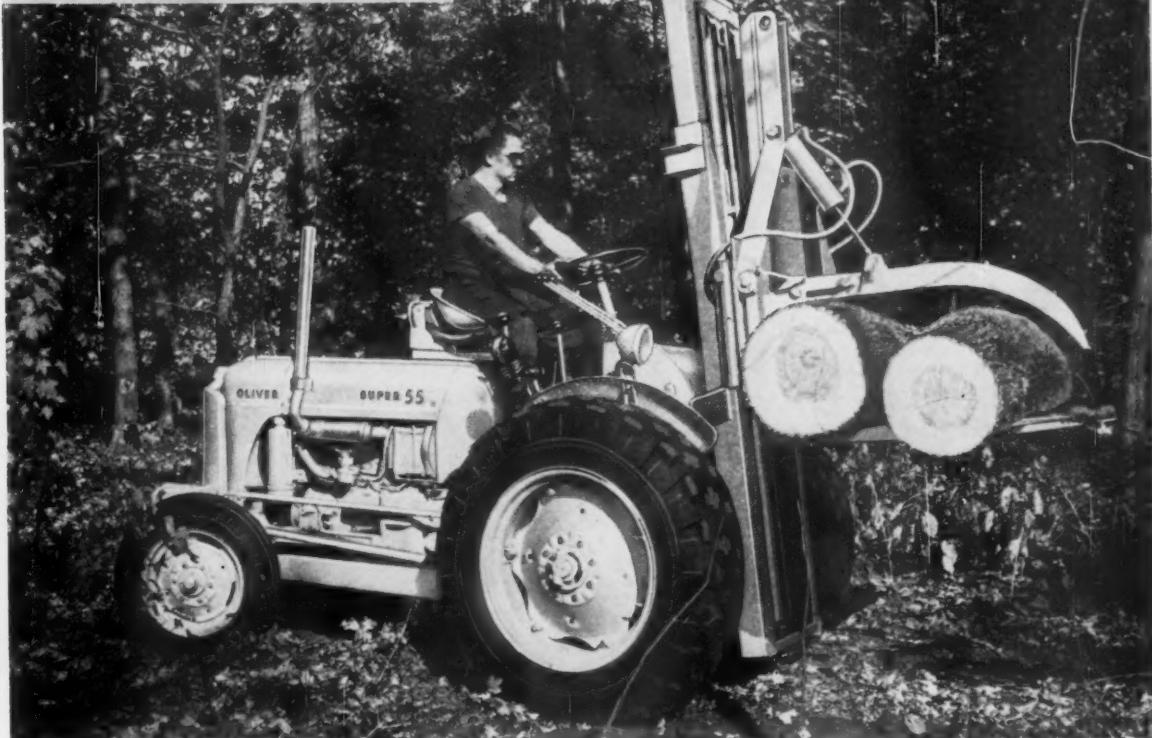
From an owner's and operator's standpoint, you'll find American Cranes perfect in performance. Operating records in yards and woods prove that Americans work with lower unscheduled downtime, lower operating cost, yet at consistently higher production rates!

"Fast, efficient, dependable and mobile . . ." That sums up owners' reports on American Cranes working in every industry. For complete information on this versatile machine —on the entire American line of crawler and truck mounted cranes—see your distributor. He handles a complete line starting at 1/2-yard, 12-1/2 tons—up to 50 tons lifting capacity!

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Saint Paul 7, Minn.

OLIVER
Super-55 Fork Lift



Equipped with hydraulic logging clamp, 8- or 10-ft. mast tilts 10° backward for extra stability when carrying, 20° forward to give you ample reach for unloading. It's the ideal rig for loads up to 4000 lb.—at the price you want to pay.

NEW! LOW COST!
Handles up to 4000 lb.

Looking for new ways to cut costs? By all means look at the new Oliver Super 55 Fork Lift. Equipped with smooth-working hydraulic logging clamp, it's made to order for carrying, stacking, sorting, loading—and dozens of other assignments.

Six forward speeds (from $1\frac{3}{4}$ to $14\frac{1}{2}$ m.p.h.) make every hauling job fast and easy—even the long ones! Power steering and short 10-ft. turning radius give you all the maneuverability you want. Traction? There's more than enough to meet every need—for rough ground, steep slopes, mud or snow. Where frequent moves call for fast, economical operation, you can't match the Oliver Super 55.

You can use it with other attachments, too: standard forks, $\frac{1}{2}$ -yd. hydraulic scoop bucket, dozer blade. Change-over is quick and easy. Thus, you have a multipurpose machine for full-time use in the woods or around the mill. And year around! See your Oliver Distributor for full details.



THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

a complete line of industrial wheel and crawler tractors and matched allied equipment



Priced for small-producer mechanization!



Ford's "yard-a-minute" Tractor-Loader
can cut costs at the mill by handling chemicals, salt, chips, almost any bulk material. Excellent for clean-up operations around debarkers.

FORD TRACTORS

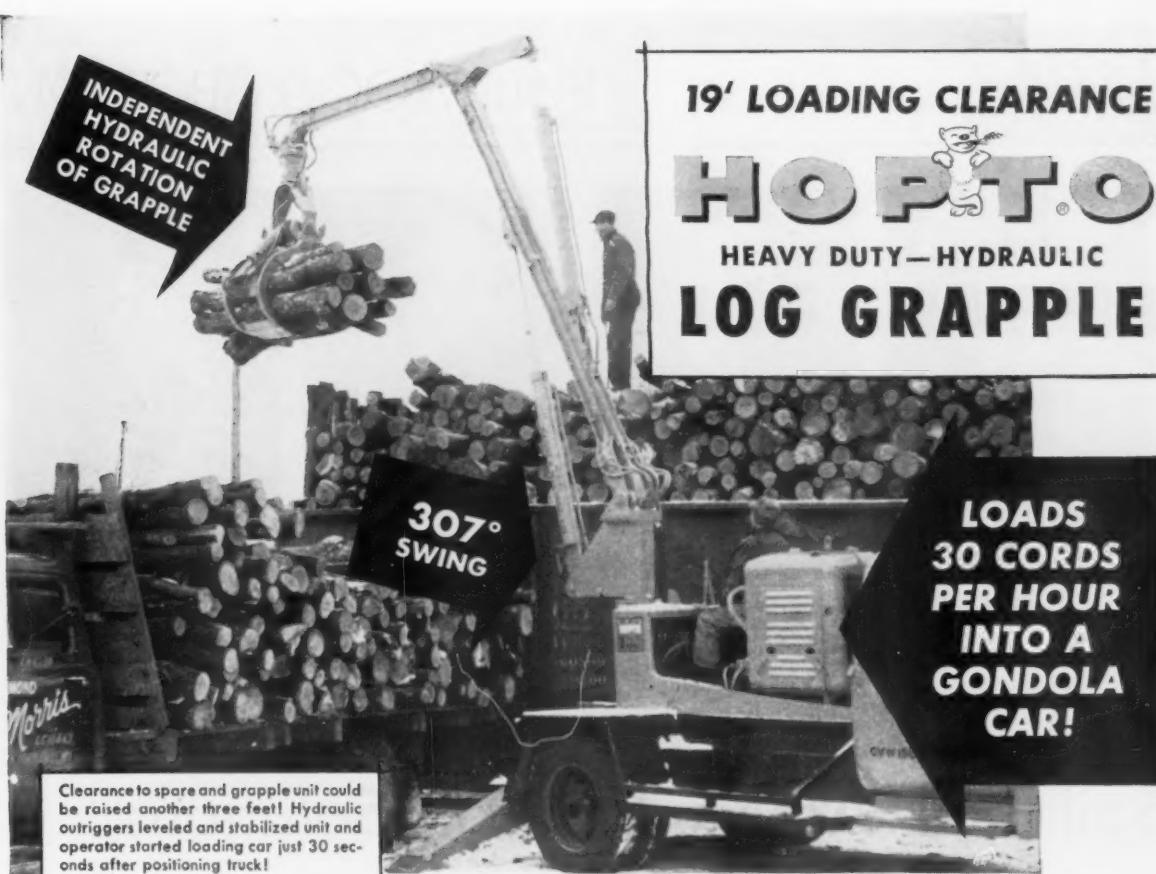
Ford Tractors can play an important part in helping you reduce handling costs in concentration yards and at the mill. But perhaps even more important is the fact that Ford Tractors can help cut the cost per cord from your producers.

For less than the cost of one laborer's annual wage, producers can own a Ford Tractor and equip it to mechanize many handling operations in the woods. Fords can be used to skid, winch, haul, load, lift, and stack. They can maintain haul-roads and clear fire lanes. On all these applications Fords are real misers with fuel- and maintenance-dollars.

Find out more about the way you can save money by mechanizing producers with Ford Tractor power. Contact your Ford Tractor and Equipment dealer, or write to: Tractor and Implement Division, Ford Motor Company, Birmingham, Michigan.



You see more **FORDS** *because they save more money!*



Clearance to spare and grapple unit could be raised another three feet! Hydraulic outriggers leveled and stabilized unit and operator started loading car just 30 seconds after positioning truck!

Badger backs up the claim of cutting handling costs with proof! You can prove it yourself . . . show a *worthwhile, measurable* difference . . . shrink handling costs of pulpwood to a fraction of previous costs! Here's how you can:

PROVE IT by cycling time and swing! With a 307° *continuous* swing and a 20 second cycling time you handle more loads per hour and boom swing is automatically cushioned for faster, *safer* starts and stops!

PROVE IT by independent rotation of grapple! Rotation of loaded grapple is done during boom swing so load is in position for uniform piling at completion of cycle . . . and ready to take a new, *big, fast* 'bite' at other end of cycle!

PROVE IT by loading height! You have a *full 19' clearance* for every loading or stockpiling operation.

PROVE IT by mobility and set up time—HOPTO mounts on any ton and a half or larger truck . . . quickly moves from one location to another. Independently controlled outriggers level and stabilize unit, *from operator's seat* . . . unit is ready to operate *within 30 seconds*.

PROVE IT by its outstanding safety features, the heaviest-duty, largest GPM hydraulic system in the field . . . and the proven engineering features that have made a digger-shovel-crane adaptation of the HOPTO 307 the standard of comparison in the construction industry!

WRITE TODAY for complete information and specifications on the HOPTO 307. Compare HOPTO with any other unit and you will know why HOPTO is the difference between profit and loss on your pulpwood handling problems.

BADGER MACHINE CO. WINONA, MINNESOTA • Dept. X

Manufacturers of a complete line of heavy-duty, completely hydraulic grapples, cranes, diggers and shovels. One of the twelve models for wheel or track-type tractor mounting, for truck mounting, or complete wheel or track units is exactly right for your handling problems.



Independently operated rotator immediately above grapple positions unit for any angle . . . at any height up to 19' clearance!



They explained subsidized government approach vs. industry-sponsored programs.

WILLIAM S. SWINGLER, asst. chief forester, USFS, in charge of tree planting program of Soil Bank Act. . . . For a bad farm situation, a tree planting program.

JAMES McCLELLAN, asst. managing director, American Forest Products Industries. . . . For a better tree crop, tree farming at no cost to the government.

CARL A. LANGENBACH, woodlands mgr., Crandon Paper Mills Inc. . . . For reluctant farmers, pulpwood by the ton and a 50¢ per ton premium.

HENRY MALSBERGER, executive secretary, Southern Pulpwood Conservation Assn. . . . Through industry paid conservation foresters, aid to woodlot owners.

Soil Bank Act vs. Industry Solutions

- ✓ **What is the Soil Bank Act?**
- ✓ **Why was it enacted?**
- ✓ **How will it affect the pulpwood industry?**
- ✓ **Is it good, bad or indifferent?**

When the Agricultural Act of 1956 became Public Law 540 in May 1956, pulpwood consuming industries were not well aware of its full implications. Popularly known as the Soil Bank Act, it was something of an "unknown quantity" until recently.

On the opening night of 1957 Paper Week, the American Pulpwood Assn. sponsored a Forest Policy Forum with the Soil Bank Act as its theme. Purpose was to show the federal subsidized approach in contrast to the industry sponsored programs.

Purpose of Soil Bank . . .

The Soil Bank Act, per se, is not aimed at growing trees. Actually, as explained by one industry forester, many trees may not get planted under this program. Its prime purpose is to alleviate a bad farm situation.

In this new government approach, under title I of the Act, cropland

on which five soil depleting crops are grown is to be taken out of production of these surplus commodities and under subtitle B this land is to be put "under vegetative cover (including but not limited to grass and trees), water storage facilities, or other soil, water, wildlife or forest-conserving uses."

The Forest Service Speaks . . .

Explained Asst. Chief Forester William S. Swingler, USFS, in charge of tree planting under the Soil Bank. "The prime purpose of the Soil Bank Act is to reduce surplus, and, gentlemen, whether we plant five or five million trees or none, it is going to cost the same amount of money. No matter what we plant, it is going to cost us money to reduce this surplus."

"The main purpose is to take care of a bad farm situation. It won't cost any more than any other crop to plant. In fact, in the South it is cheaper.

Again, remember, its purpose is to reduce surplus, not plant trees."

"The Conservation Reserve portion of the Act takes this cropland out of production and puts it into some conservation crop such as grass or trees for a period ranging from a minimum of three years to 10 years and in some cases up to 15 years, to get your land or forest trees started."

"This is to get the land out of production of surplus crops into a crop we can use such as grass or trees."

"We tell the farmers to go to the state organization—that is the Agricultural and Stabilization Committee (ASC), and get the answers from them."

How it works . . .

The county agent has to figure a base acreage. He does this by averaging crop production for the past two years. (Incidentally, some farm own-

ers have delayed applying for Soil Bank benefits so that they can build up their two-year average. In other words, by putting increased cropland into use for any consecutive two-year period up to 1959, they can use this higher average.)

The Soil Bank will pay the farmer up to 80% of the cost of the trees and 80% of the cost of planting plus an annual rental, which on the average is around \$10 a year.

For instance, if the seedlings cost \$3 per M and planting \$9 per M, this amounts to \$12. The government pays 80%, or \$9.60, plus the annual rental. Total income for 10 years per acre would be around \$80.

Questions, Questions and Some Answers . . .

Q. What percentage of farmers are signing up. **A.** This information is not available now, may be available after April 15. There is more signing up than expected, especially in the Southeast and Lake States. The Forest Service is faced with a pretty tough situation to guess in three years how much trees will be needed.

Q. Any specified spacing of trees? **A.** FS has asked the state foresters: (1) to grow and distribute the tree seedlings required; (2) to render technical advice. The Forest Service will reimburse the state foresters.

Q. What is the maximum that one man can receive? **A.** \$5,000 per year rental. There is no maximum to cost sharing.

Q. If you are trying to get acreage out of production, what is the reason for that. **A.** Don't know.

Q. If the trees die, will you pay to replant? **A.** There is a provision to replant if for some reason they die.

Q. Is harvesting of Christmas trees prohibited? **A.** Yes, under the 10-year period.

Q. The Soil Bank will add to our tree plantations but it is in the nature of additional government handouts. From the industry standpoint it may be a godsend. It may get more trees planted in the South today. The need for seedlings threatens to snowball. In 1956 the Southern states produced 60 million trees; demand was 125 million. This year they will produce 75 million trees, but I venture to say demand will be up to 150 million this year. What we are talking about is not a forestry program. Without the Soil Bank our source of tree seedlings supply was limited. I asked how much will this additional program cost and can we afford it?

A. For tree planting, up to \$450 million a year is set up. Don't really know how much it will actually cost. It might well correct a bad situation

and the question I ask you is, how much can we afford not to take care of this tough agricultural problem?

Explaining about Tree Farms . . .

Each year the pulp and paper industry spends many millions of dollars in various services and land management programs aimed at woodlot owners. One such program is the Tree Farm system, which was explained by James McClellan, assistant managing director of American Forest Products Industries (AFPI), who stressed that this program doesn't cost the government a cent.

Tree farms started in Alabama, spread to Arkansas, and now includes some 44 states with about 10,000 tree farms comprising an estimated 41,750,000 acres. These tree farms vary from 3 acres to 800,000 acres. One third are less than 100 acres in size.

Forester McClellan explains that the tree farm program puts money in the farmer's pocket. "If you manage your land to get the best crop, that is more money for you," he tells him.

To become a tree farmer, the land has to be put under approved forest practices, has to be protected from grazing by a fence, etc. "And," emphasizes Mr. McClellan, "you don't have to sign a thing."

Robert True, forester for S. D. Warren Co. in Maine, explained his company's approach:

"We are very much interested in smaller woodlot owners. Frankly, we can buy wood cheaper this way. We started the Tree Farm Family 18 months ago and it caught on. So far, we have 68 tree farm families embracing about 30,000 acres. About 50% of this is certified."

"We have no gimmick. If you have a piece of land, we will be glad to have our man come out. Another point. You don't have to sell your forest products to S. D. Warren. Naturally, we'd like you to, but if you think you can get a better price from some of the other paper companies, you can sell it to whomever you want."

To the farmer's question as to how Warren can afford to hire foresters for this work, Forester True replies, "We can't afford not to." "As to sawlogs and veneer logs," says Mr. True, "We can help you with that too. We help you to get the greatest return out of your trees."

The approach of the Southern Pulpwood Conservation Assn. (SPCA) is to tell the woodlot owner that SPCA or the pulpwood company involved, can help him grow trees as a crop on his land through conservation foresters. "What's more," explains Henry Malsberger, executive

secretary, "this program doesn't cost the taxpayer money, but is paid for by the pulpwood industry."

SPCA tells the small woodlot owner that he is an important man in their wood supply picture.

Premium Payments . . .

A newer approach to make the small woodlot owner manage his lands under approved forestry management practices was revealed by Carl A. Langenbach, Woodlands Mgr., Crandon Paper Mills Inc., Ft. Madison, Iowa.

This company recently began a system of buying pulpwood by the weight and paid a premium of 50¢ a ton for wood harvested from managed woodlots.

"Since our area had little history of sales of pulpwood, it was relatively easy to start buying pulpwood on a weight basis. Old scales for straw were still in place and the transition to pulpwood was easy.

"I believe to go back to a cord basis purchase would be very difficult. Cleared land wood is purchased at a negotiated price. Right now we pay \$6 per ton or less for this type and \$6.50 for wood from managed woodlots. If all goes as planned, we may increase the differential this summer to 75¢ or \$1. Our present plans are to hold a price differential at all costs, for once we are committed to a program it may be difficult to retreat gracefully."

Some Don't Like It . . .

"Jobbers bringing in pulpwood cut from someone else's land do not like the idea. In many cases they have paid for it on a lump sum basis. The more pulpwood they can cut off one area the more profit they make. We have told jobbers they will be eligible for the bonus price too, if they will harvest according to directions of company foresters."

"There are many requests for foresters to come and look over this land and tell them what to do to qualify for the bonus. Several cases were approved at the higher price but most of them had no idea of what to cut and what to leave behind."

"Those who appear to be practicing

STATEMENT OF POLICY: APA's board of directors favor the administration of the tree planting program of the Soil Bank Act so as to place the greatest practical amount of authority and responsibility on the state agencies, and specifically in the hands of the state foresters.

forestry in the judgment of the inspecting forester are given 30 days to six weeks to cut an area and then we reinspect. The price increase is then granted.

"To be sure, we run into the jobber cutting according to schedule for a short time and then he would walk in and gut the next stand, but we feel that sooner or later we will hear about it and then we can check more often or just refuse to grant him the bonus.

Some Do Like It . . .

"The jobber who is buying wood by the ton is more apt to go along in this manner, for he is handling relatively larger wood than he would on a clear cut basis. The better jobber recognizes this as meaning lower logging costs.

"Our best cooperation comes from the higher and usually more successful class of farmer. We can reach them with our idea of growing trees and they know for certain that their revenue from most of their timber lands is now little or nothing. They admit there is no pasture for their cattle and realize the erosion dangers in clearing hillsides. We have received sincere compliments from progressive landowners who believe their woodlot can yield a good off-season income.

"There is one result that I am sure of, by the small price differential of 50¢ per ton, we have had more people willing to sit down and listen than ever was possible under any other system of public information and education. The mere idea of a price spread will make a good 50% sit down and listen. When you hit a man in the pocket book, he listens.

What's the Advantage . . .

"I believe this system of promoting good forest management has many advantages over any that could be proposed by industry or government.

"This is the biggest advantage that I know of, for it pays the bonus to the man who is working. It pays him right away when the cutting is being done and not six months from now after inspection by a third party. The proof of good forest management is in the continuous, profitable harvesting of the forest crop.

"The idea of a government sponsored system of subsidies is, to me, cumbersome," said Mr. Langenbach. "The program can so easily get wound up in local committees and local politics to say nothing of the

political footballs that could be kicked around on a national level.

"There is not any government subsidization of good forestry in countries such as Germany, which have had good forest management history to learn from. In those countries, forestry is a good thing because it pays off in the end. Unless we can make it worthwhile for the man to grow and harvest his timber he will not do it. I believe that subsidies by some public agency will not work as well for they subsidize the submarginal farmer and operator.

Good forest management on privately owned land is good business for any wood using industry. Obviously the sawmills and veneer mills have the most to gain and should be solidly behind a program such as this. However, to wait for them to act may call for more time that we can afford to waste. The benefit that can be realized by the paper industry itself is in growing more raw materials closer to the mills. Increasing the diameter of the average piece of pulpwood processed should be more than sufficient to offset the cost."

Corridor Comments . . .

Some after-the-meeting-was-over comments:

"We are falling in love with this problem of helping the small woodlot owners."

"Here is an industry doing more than it is supposed to do."

"God help forestry if it gets in the

position of agriculture, and there are some boys who would like to get it there."

Pulpwood at Paper Week

Timberland taxes—what position will this industry take? There is no present likelihood of a united front, as for replanting and improvements, some owners now want to make this an "expense item" and others, big owners especially, prefer that it be a capital gain charge. To capitalize it, to use the Treasury term, may be the future long term answer. But it looks like the Internal Revenue may find a way this year to please both schools of thought.

The American Pulpwood Association, with 300 registered, held a series of sessions which revealed that this industry is really getting down to work in the business of scientific growing of trees. One participant said the day may come when the APA becomes, in many respects, the most important division of the industry and its most vital association segment. Leaders said the greatest opportunity for savings and operations improvement is from the tree to the mill door—not in the mill. This, of course, is based on the fact that wood cost and wood production cost are a major portion of industry expense. One company put it at 45%.

American Pulpwood Elections

Lucian A. Whittle, woodlands manager, Brunswick Pulp & Paper Co., has been re-elected president of American Pulpwood Assn. Elected as vice presidents are W. J. Damtoft, Champion Paper & Fibre Co.; E. B. Hurst, Consolidated Water Power & Paper Co.; and George B. Amidon, Minnesota & Ontario Paper Co.



For pulpwood problems, an "after hours" session

Time: 1:30 a.m. Subject: Intensive land management, mechanization, site preparation. (l to r) RAY IRETON, Pittsfield, Mass., rep for Drott Mfg.; N. C. F. (for FRED) NIELSEN, sales development, pulpwood & logging group, International Harvester, Melrose Park, Ill.; D. E. HESS, v.p., Glatfelter Pulp Wood Co.; KEN JOHNSON, asst. sales mgr., PULP & PAPER; WALTER R. KORTH, I-H, Melrose Park; JIM SWORDS, I-H mgr. in Newark, N. J.; MARTY E. KLINE, I-H mgr. in Boston; KEN TROWBRIDGE, woodlands mgr., North Carolina Pulp Co.



Skidding Tree-Length Logs . . .

Contract logger skids tree-length logs with Allis Chalmers HD-6 to shores of Spirit Lake, Idaho, as Inland Empire's tree farm tract already yields pulpwood left from original old-growth logging.

How Mill Put Tree Farm on Managed Basis

- Why buy it all when you can grow some of it? That's the challenge being met by a veteran paper producer now in the tree farming business in dead earnest.

The papermaker is Inland Empire Paper Co. of Millwood, Wash., on the outskirts of Spokane. Up until three years ago the company obtained all its pulpwood from a wide area stretching northward towards the Canadian border and eastward into northern Idaho and western Montana. Inland Empire still depends on purchases for the bulk of its raw material but it hopes to become self-sustaining to a considerable degree in the future.

The company now owns and manages the 30,000-acre Mount Spokane Tree Farm, part of the AFPI system and certified by the Western Pine Association. The tract has been largely cut over for sawtimber in years past. Unlike many industrial tree farms in western U.S., there are no remaining large stands of old growth to bridge

the gap between a virgin forest and the impending second-growth economy. Inland Empire is depending on the growing capacity of the land to produce future crops.

The Problem . . .

Very little of the original old-growth timber was left standing at the time Inland Empire purchased the land. The virgin stand consisted mainly of Idaho white pine. This stand was cut and logs transported to the mill by a built-up wooden flume. Later the area was badly burned in a forest fire, in 1939. The land lay unplanted and uncared-for for many years.

When Inland Empire became owner in 1953, it marked the first such step by the company toward the procurement of timber from its own lands. However, the tree farm area presented a great number of problems which required costly, long-range plans and improvements, such as:

1. Roads, the primary need, for ac-

cess and fire protection.

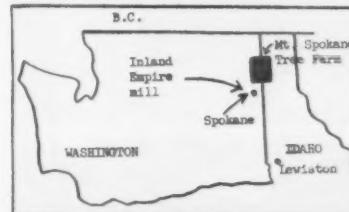
2. Planting.
3. Snag removal.
4. Salvage logging and finding suitable logging contractors.
5. Right-of-way agreements and land exchange.
6. Aerial photos.
7. Inventorying, cruising.
8. Setting up objectives.
9. Setting up immediate plans to recover as much good material as possible before the trees rot or are blown over.
10. Removing stagnated timber from stands so it does not compete with vigorous trees for light, moisture and soil nutrients.

Solution: Not Easy or Cheap . . .

Responsibility for getting the tree farm onto a managed basis falls on the shoulders of James W. Anderson, technical forestry graduate of Montana State Univ., '50.

Mr. Anderson has forestry experience in Montana, Idaho and Washington, and during one season in Alaska he cruised pulp timber for U.S. Forest Service on land now included in the Ketchikan Pulp Co. allotment.

In his four-wheel-drive jeep station wagon, Mr. Anderson grinds over the ancient trails, consulting with his summer forestry student cruising crews, checking planting areas, marking trees and boundaries for salvage



Tree Farm Straddles States . . .

Map shows location of Mount Spokane Tree Farm, astride state line between Washington and Idaho.



Mechanical Tree Planter Proves Worth . . .

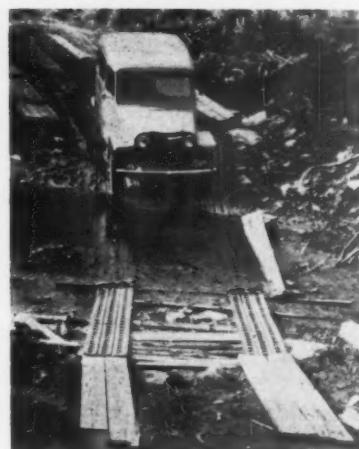
(Left) When Lowther planter moves from point to point, unit can be moved in "up" position, thus avoiding obstacles and reducing wear on moving parts. (Right) Close-up of planter in "down" position, at work in reforesting burned-over site. At no greater cost, this mechanical method of planting appears to provide a greater percentage of survival of seedling stock.

and improvement cutting. Another big job is developing the roads system—laying them out, searching out small contractors who will build them at an economical price and maintaining proper watch on construction progress.

A Tough Decision . . .

A tough decision for the company and its forester to make was whether to (1) manage lands for greatest economic return, which would mean keeping the pulpwood but peddling sawlogs to sawmills or (2) aim for maximum volume production of sulfite pulpwood species. Course No. 2 was taken, based on these factors:

- Pulp species could be cropped in 60 years (far less time than it

**Road Building is Important . . .**

(Top) Road "specs" are ironed out in chat between Inland Empire Paper Forester Jim Anderson (left) and grader owner-operator.

(Bottom) "Cheap bridge" across creek is made of surplus emergency steel airfield surfacing. Four-wheel-drive jeep proves answer to negotiating steep, rough country in all seasons.

would take yellow or white pine or Douglas fir to reach commercial size).

- There is a wide variety of sites and exposures adaptable to several pulping species; white fir, hemlock, lodgepole pine, Engelmann spruce.
- Where obviously best suited for the site, cedar (for poles) and pine (for lumber) will be managed.
- A 60-year rotation on pulping species appears best, due to evidence these species are susceptible to various diseases after that age.

Inland Empire owns other smaller timber tracts scattered throughout the district that, along with the Mount Spokane Tree Farm, will one day provide the company with a substantial portion of its annual wood requirements.

One of the "firsts" instituted by Forester Jim Anderson was the purchase and use of a Lowther Model CM Wildland Tree Planter, a mechanical planter designed and built for the south. He was faced with the problem of reforesting a number of cutover, burned-over sites that were thick with heavy brush, impossible to hand plant at a reasonable cost per acre; he felt mechanization was the only answer. It has worked out very satisfactorily to date. The planter is pulled through the planting area by a large tractor equipped with a brush-busting blade on the front.

Mr. Anderson explains that it would not be feasible to use the Lowther machine without the brush-clearing and soil-preparation action of the tractor. With a three-man crew, 5000 seedlings can be planted per day. Slopes run from mild grades up to 45%. Cost runs about \$33 per acre, approximately the same expense as for hand planting. Survival is considerably better with the mechanical planter, averaging 80% as against an experience of 60% for hand work. From 350 to 400 seedlings per acre are planted. The species chosen for the original work is Norway spruce.

The company operates an extensive log procurement program under supervision of Max Tripp, veteran IEP Co. logging manager.

Tree-Farm Hunting

Nearly 17,000 sportsmen hunted big game on Crown Zellerbach Corp.'s 700,000 acres of Oregon-Washington tree-farm lands during 1956 hunting

seasons. They bagged 2,185 deer, 442 elk and 123 bear. Chief Forester George Schroeder reported that hunter education and cooperation has improved extensively but a vandalism problem continues to exist.

Concerning CZ's recreation program P. W. Schneider, Oregon State Game Commission director, commends the organization: "Your constructive participation in educational and recreational programs has been very helpful in maintaining orderly outdoor recreation for the people of Oregon."

To Give B.S. in Forestry

A need for foresters with redwood region training has received recognition. Starting this coming fall Humboldt State College, at Arcata, Calif., will institute a four-year curriculum qualifying for a b.s. degree in forest management.

The school inaugurated its present two-year forestry-lumbering curriculum in 1953. Increasing importance in forestry, from both industrial and public aspects, has intensified the region's demand for trained graduates. The expanded program, according to Assistant Prof. E. W. Pierson, head of the school's forestry education, "does not neglect work in the basic sciences or in the theoretical aspects of forestry proper, but places major occupational emphasis upon preparation for the practical work of the forest manager and logging engineer."

Humboldt State occupies a unique position in the forestry field due to its central location in the redwood region. As stated by Mr. Pierson, the educational program is "closely affiliated with industry, drawing on its cooperation and helpfulness to impart to students broad and practical understanding of their chosen field."

New Debarker Offered

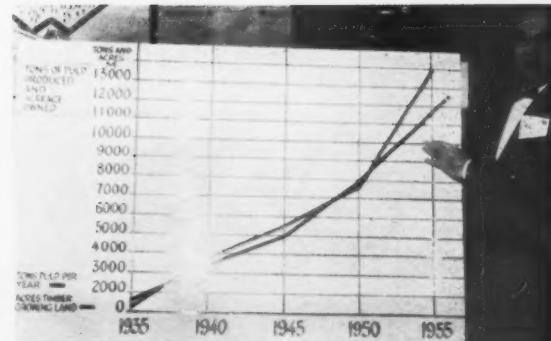
A new debarking machine for peeling sawlogs is being manufactured by Carl W. Mullins Engineering and Mfg. Co. of South Carolina.

Called the Millis Log Skinner, the machine is based on simple engineering principles and has a low maintenance cost, according to the company. It successfully barks logs so that slabwood can be chipped.

It has an adjustable center section which operates hydraulically and can be raised and lowered to accommodate 30-in. logs. The machine, which has been in the experimental stage for the past six months on a five-day week schedule, is now ready for the market. The company now has a new plant operating which employs 40 people.



Frank Heyward Jr.: His message was clear



Karl Swenning: Don't let industry ownership be stifled

What are South's Pulpwood Dangers?

Provocative Southern meeting faces up to landowner problem, legislation threats; seeks some panaceas

• The small Southern landowner owns or controls 74% of the Southern forests. From him must come the life-blood of the South's paper titans. In the past few months, more and more attention has been directed toward this small landowner and the increasing need for the pulp and paper industry to sell itself not only to him, but to the man on the street. Two men who are doing a lot to sock home this message are Frank Heyward, Jr., of Crown Zellerbach's Gaylord Container Div. in Bogalusa, La., and Scott Paper's Karl Swenning.

What are the Facts . . .

Last month, at the annual Southern Pulpwood Conservation Assn. convention in Atlanta, they appeared before some 500 delegates (Frank Heyward leading off, Karl Swenning as clean-up man) and laid out the facts:

1. For the first time in the South, tree growth exceeds tree cutting. But there is a danger of a shortage of stumps which would be enough to remove the industry's competitive advantage and, once lost, it is hard to get back. Reason: The industry is not growing enough pine fiber on its own lands to become self-sufficient and the landowners who control three-fourths of the timber are not growing or cutting as they should.

2. Total forest area in the South is misleading. Reason: Although there are 193 million acres now growing, 91 million must be subtracted for hardwood, 81 million more for oak-pine lands, 66 million more for low site quality lands, leaving only 42 million acres as the nerve center from which

to draw pine fiber.

3. The hardwood threat keeps growing. Some 55% of Southern forests is in hardwoods and they are taking over millions more every year.

4. Surveys show that since 1947, productivity rating of lands cut-over has been 82% good cutting on lands owned by forest industries, only 45% good cutting on other private lands and only 34% on farms. The latter two groups control most of the forests.

Frank Heyward's conclusion is obvious: "The paper industry has more at stake in the small landowner's timber than the landowner himself."

Legislative Actions Hurt . . .

From Karl Swenning came some dominant postscripts to Frank Heyward's discussion. Said Mr. Swenning: "We should be particularly concerned about the 17.5% of lands owned by the forest products industries. The reason lies in proposals which are being made by some legislative bodies to limit the amount of timberland which a person or corporation may own and the undercurrent of such actions by others." Mr. Swenning's points were crystal clear, too:

1. From 1935 to 1950, pulp production and the pattern of land ownership followed similar upward trends. In 1955, it took about 1.8 cords of wood per ton of pulp produced. If the acres owned by industry produced one cord per acre, the industry could supply about 70% of its needs. But these lands are generally understocked and must be rehabilitated. The industry, therefore, cannot hope to supply even 50% of its needs for many years. This,

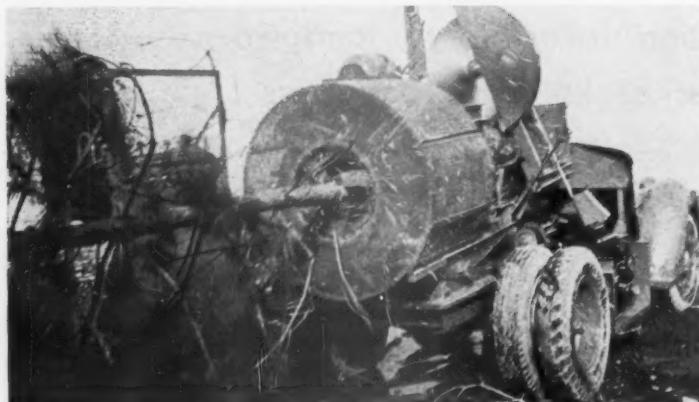
and the rising cost of stumps, indicates an increasing need for paper companies to invest in more lands.

2. Since investors in pulp and paper mills want to know what the proposed mill's wood resources are before putting money into it, any measure taken to limit the amount of timberland which a mill can own could also indirectly dry up the source of funds for construction of new mills. This is also true of some kinds of taxation which have been proposed.

"Clear Up Misunderstandings" . . .

Mr. Swenning's conclusions: Mills should do everything possible to clear up points of public irritation concerning their land acquisition and management practices; public support in areas most directly concerned with industry and forest management objectives must be expanded; basic factual material of management and acquisition must be supplied to individual and groups most active in developing public opinion.

Others on the program provided members with fuel to carry out many of these objectives. Lucien Whittle, retiring president of American Pulpwood Assn. and newly elected vice president of SPCA, accentuated the importance of the paper industry and its allied industries to the economy of the South; there were several speakers who described ways and means for developing television and radio programs to put across the industry's messages. President-elect R. C. Barrenbrock, of Mead Corp., pledged continued efforts by SPCA to put over the message.

**For better profit in plantation thinning operations . . .****This experimental tree delimer and bucker.****Something New in Delimbing**

About 25% of the time spent in harvesting a tree is in delimbing. Pulpwood producers would like to take the tree where it stands in the forest, debark and delimb it, they say.

An experimental delimbing and bucking machine has been designed and is being developed by Herbert J. Hurme. He is a graduate student working for his master's degree at the department of agricultural engineering at Cornell U.

Under the direction of Professor E. W. Foss, student Hurme has developed a machine to delimb and cut into desired lengths the trees removed in plantation thinning operations.

Objective of the delimer is to lower labor requirements in thinning operations. High labor costs make the first thinning operations a cost item, says Mr. Hurme.

In row thinning operations, all trees are felled in the row and the machine is moved up the row of windrowed trees.

In central landing point operations, the felled trees are moved to another

location for delimbing and bucking.

Present capacity is about two cords an hour. However, six or seven cords per hour would not be unreasonable for this type of machine, says Mr. Hurme. Maximum tree diameter which can be handled with the experimental model is 9-in.; estimated cost is between \$7,000 to \$8,000. Unit has 3 wing cutters, operating at 8800 rpm and revolves around tree at 32 rpm.

**New Chemical Debarker
Succeeds on Aspen**

• Leonard W. Melander, American Chemical Paint Co.'s research development dept., announces good results in tests of a new aspen debarking chemical, "D-Bark." Iron Range Resources Commission of Minnesota, Waldorf Paper Co., St. Paul, and Blandin Paper Co., Grand Rapids, Minn., tested the new formulation last summer on trees belonging to Clearwater County, Minn. Enough aspens were treated in two days to furnish about 70 cords of pulpwood. All treated trees died in three to four weeks.

Blandin Paper Co. reports that in October, ten cords were run through their stream barker at the rate of 12 sticks per min., as compared to a normal speed of 6 to 7 sticks per min. The stream barker operator stated that this wood barked as well or better than old poplar at the same rate. In January another ten cords were treated while frozen and were found to debark much more easily and efficiently than green untreated frozen wood.

Waldorf Paper Co., Marathon Corp., Rothschild, Wis., and Peterson Bros., Spalding, Mich., obtained similar results.

D-Bark is sprayed or brushed directly on bark, requiring no girdling or frilling. It should be applied early in the sap peeling season, with sufficient time allowed for the chemical to work up the tree before the bark would normally begin to stick again. Mr. Melander says paper companies would benefit by arranging to have their pulpwood suppliers treat the aspen on the stump during the bark peeling season, before cutting and shipping to mills.

Companies with machines for peeling aspen pulpwood in the field can now extend their peeling season by using D-Bark treated aspen in a moist condition after the sap peeling season has ended, provided trees are treated early in the season. Treated trees may be hand peeled the year following treatment.

**Three Months after Treatment**
Peterson Bros. applied chemical in June; took picture in Sept.**Bark Separates All Way Up**
Section near top of tree is debarked.

Bills Imperil 12-man Exemption

Plagued by continually spiraling pulpwood costs, woodlands managers and pulpwood producers have another worry. Bills now before the Senate Subcommittee on Labor would among other things remove the 12-man and seasonal forestry and logging exemptions of the Fair Labor Standards Act.

"The industry needs these exemptions," explains W. S. "Bill" Bromley, executive secretary, American Pulpwood Assn., because:

"1—Congress originally set up the FLSA act for industrial manufacturing operations and then later exempted pulpwood production on operations with less than 12 men and for certain seasonal work. Congress agreed, and rightly so, that it is impossible to apply a factory-type law to small pulpwood operations.

"2—It is impossible to report accurately hours worked by pulpwood workers and unjust to hold pulpwood producers responsible for keeping records of hours worked under such circumstances. This record keeping would place a burden of increased supervision, impractical record keeping, and uneconomic operation on the small businessmen, farmers, woodlot owners and loggers engaged in the business of producing pulpwood.

"3—Pulpwood production is more nearly like agriculture, which is now exempt from provisions of the FLSA. There are over 30,000 individual pulpwood producers, cutting and delivering on an average of less than 1,000 cords a year. The balance of the time they work on other seasonal work.

"4—Small independent pulpwood producers will have difficulty in maintaining independent status if exemptions are taken away, since the Act would then be economically unworkable.

"5—Definition of 'employe' as found in FLSA should be brought into line with definitions found in other laws such as Social Security. This will firmly establish pulpwood producers as 'employes' of producers and producers as independent contractors, which they are."

New Line of Chains

A new line of improved, long-lasting chains for gasoline-powered chain saws is available for production loggers and pulpwood cutters, according to Don Blasius, accessories sales manager for McCulloch Motors Corp., Los Angeles.

A leading feature of the new chains is their exclusive Pintail design, which reduces chain "rear-back" action and results in smoother, faster cutting. Because of smooth performance, the

chains are especially well-suited to boring, Mr. Blasius said, and are constructed of top-quality, high-carbon-content steel, Aus-tempered for extra strength.

To Study Wisconsin Forests

A team of specialists is planning an intensive forest resource analysis of the Menominee Indians of Shawano and Oconto counties, Wis. The precise inventory of the Menominee's forest resources is intended to help the tribal population economically in the future. John Beale, Wisconsin state forester, will probably be in charge of the wood fiber resource study. This is one of two major studies which are being made preparatory to writing a legislative program to terminate federal wardship for the Indians.

Hisey Tells Foresters

About Pulping Future

What's ahead in pulping developments?

Perhaps concentration yards, as in the lumber industry, where slabs, forest thinnings and other chippable material can be centrally processed for fiber plants.

Chipping in the woods. Several portable barkers and chippers are available now. Principal problem is separating bark from clean wood. In New Zealand a flotation process has been used successfully to do this.

Trend toward kraft pulp mills owning their own timber supply. While the volume of chippable milling residues appears large today, the economy of the future may have fewer sawmills, hence less chippable material. Guaranteeing a raw material supply



Speaks on Pulping Future

W. O. HISEY (left), Western Kraft Corp., Albany, Ore., spoke to SAF meeting on what's ahead in pulping developments. He was introduced by ELMER E. MATSON (right), chief, forest utilization service, USFS, Portland.

means growing your own trees.

More so-called "small" pulp mills. How large a mill must be to operate economically depends upon raw material supply, freight considerations and other economic factors. A small mill, of 100 ton capacity, can be profitable in some areas.

More use of "plantation" grown timber and younger tree crops, thinned from stands. This wood has shorter fibers, may result in pulp with different properties.

Pulp mills depending upon chips instead of a whole log supply save money by not having to install a wood room, an important consideration.

These were some of the "look ahead" observations made by W. O. Hisey, vice-president, Western Kraft Corp. and manager of the plant at Albany, Ore. in a talk given on Feb. 11 to the Portland, Ore. chapter of the Society of American Foresters.



Shark Type Cutter Used in South

Resembling the dangerous end of a man-eating shark, this V-type saw blade tree cutter is being used on an International TD-18 crawler tractor by owner S. M. Kilgore, Pope, Miss., to clear stumps on the farm of Ed Horn near Phillips, Miss. The snags, most of them solid and some 10 ft. across the base, were being whacked off at the rate of 300 a day.

Pulpwood Personals

S. K. HUDSON, timber mgr. for Container Corp's big new 300-ton mill at Brewton, Ala., has announced the following nucleus members of the woodlands dept.: **FRED AUSTIN**, U. of Fla., grad formerly at the Fernandina mill, asst. timber mgr.; **BILL LANE**, formerly with USFS at Talladega, Ala., and **JIM RENFRO**, newly graduated from North Carolina State, conservation and cruising work; **A. L. C. NELSON**, former logging engineer for The Crossett Co., mechanical development and chip procurement; **JIM AMOS**, **CLAUDE SWIFT** and **BILL SMITH**, area managers . . .

CHRIS GOODWIN, of North Carolina State div. of forestry, has been named president of newly formed Piedmont Forestry Club, a group of professional foresters in the Statesville, N. C. area. . . . The sixth annual forestry symposium of Louisiana State Univ. being held April 4 and 5 will concentrate on special problems in Southern forestry. . . . **L. C. COOPER**, dry kiln foreman for Dierks Forest, Inc., for 13 years, has been named rough lumber supt. of Crossett Lumber Co. . . .

INTERNATIONAL PAPER CO. has started operating a new mechanized pulpwood yard at Russellville, Ark., near its Camden mill . . . **VERTREES YOUNG**, pres. of Gaylord Container Corp. div. of Crown Zellerbach, due congrats after his election as president of American Forest Products Industries, Inc. He succeeds the late **J. P. WEYERHAUSER**.

JAMES P. JOHNSTON, contract logging supervisor at Crown Zellerbach's Clackamas, Ore., Tree Farm, was featured in Ebony magazine recently as

**Canadian Safety Award**

T. S. JONES, manager of industrial relations, Dryden Paper Co., Dryden, Ont., presents Northwestern Ontario certificate of merit to Woods Mgr. **NORMAN McMILLAN** in recognition of the safety record achieved last year.

"probably the only negro to hold a management position in a major U.S. forest industry." He graduated from Univ. of Washington forestry school in 1942 and joined Crown in 1954 after managing a Haitian government forest project . . .

DR. BOHUSLAV MIKULKA, utilization expert for Southern Pine Lumber Co. in Diboll, Tex., is back in his office after attending a UN conference on wood products in Geneva, Switzerland, and visiting particle board plants on the Continent and in England. Dr. Mikulka is technical expert of Love Wood Products, a Southern Pine subsidiary which concerns itself with wood utilization . . . **ROBERT G. FAIRBURN**, pres. of Diamond Match Co., announces the appointment of **RICHARD D. ROSEBERRY** as chief forester. He will continue to operate out of Chico, Calif. For the past ten years, Mr. Roseberry has been chief forester of Calif. Lumber Mfg. Div. of Diamond Match. He is succeeded by his assistant, **CHARLES R. ARMENT**.

WALLACE DELAHEY, Toronto consultant forester formerly with Great Lakes Paper Co., has been elected president of Canadian Forestry Assoc. of Ontario, succeeding **GORDON GODWIN**, woodlands manager in Ontario for the Ontario Paper Co. **C. B. DAVIS**, Abitibi Power & Paper Co., was elected vice president . . .

EMERSON LEWIS, newly named superintendent of wood utilization for Eastern Corp.'s \$10,500,000 kraft mill at Lincoln, Me., is busy helping in design and construction of the new woodyard and woodroom. He's a native of Portland, Me., and a grad of Bowdoin College.

Bowaters Will Plant 20 Million Seedlings in E. Tenn. Nursery

Bowaters Southern Paper Corp. will establish a pine tree nursery with a 20 million seedling capacity early this spring.

The nursery, located along the Little Tennessee River in the eastern part of the state, will have a 60-acre tract for growing trees and another 40 acres devoted to producing seed for superior trees.

R. R. Edgar, Bowaters woods mgr., said the company has been purchasing seedlings from state nurseries but unprecedented reforestation activities by farmers and other landowners has created a tremendous demand for trees. Hiawassee Land Co., which grows and produces pulpwood for Bowaters, has planted some 40 million trees to date.

Would Reform Government Role in Timber Business

A Business Executives' Research Committee consisting of Oregon businessmen—including key representatives of banks, industrial and business firms, foresters and others—recently was sponsored by Lewis & Clark College and Reed College, both of Portland, Ore. It conducted a study of the state's forest industries and, as a result, made these proposals:

It urges that annual timber growth be increased by converting from stagnant to thrifty forests through accelerating harvest of old-growth, over-mature trees (about half of Oregon's commercial forest land is old-growth). The rate of conversion would be as rapid as sustained yield limitations permit.

National Forest timberlands contain 45% of Oregon's total standing timber. But log production from these lands accounted for only 18% of the state's timber harvest in 1954, even though the Forest Service reached 89% of its allowable cut that year, as compared with 65% during the previous 12 years.

The report recommends that management of all federally owned forest lands be consolidated under a single administrative body to improve overall management and unify sales policies. It suggests that Congress establish a Federal Forest Corp., with regional branches to manage federally owned forest lands. It would administer all contracts involving timber sales, primary access road construction and maintenance, and would perform related functions.

As a minority recommendation the report further states: "One of the purposes of the Federal Forest Corp. is the development and execution of a policy of gradual elimination of itself from the business of growing trees for the same reasons that the government should eliminate its control of any and all businesses commonly constituting the free enterprise system which supplies the tax revenues that support the government. Those land areas controlled by the government, but particularly suited for specific purposes such as recreation, should be turned over to the National Park Service or other suitable agency, and the balance of the land gradually sold into private ownership. Good forest management is even more difficult to achieve by a government agency than by a private business. The agency's survival is not dependent upon successful management. Its goal need not be optimum utilization. Its long-range planning is subject to the whims of annual congressional appropriation and its management is susceptible to political pressures."

A new line of Standard Oil greases

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Major breakthrough in grease technology results in development of new thickening agent. New grease has greater high temperature stability, superior multi-purpose qualities, improved lubricating properties.

Standard Oil instituted a grease research and development project several years ago. The result of this work is the line of RYKON Greases, which contain a unique new non-soap, organic thickening agent.

RYKON Greases surpass in stability and performance the best greases made up to this time. They bring to industry new opportunities for improved machine performance. They greatly reduce the maintenance and grease handling problems encountered in industry.

RYKON Grease properties

RYKON Greases are smooth, buttery-textured greases, made from the finest quality, solvent-extracted oil. Their thickening agent is a Standard Oil exclusive. RYKON Greases have these high-quality characteristics:

High temperature stability—Better heat stability than any other petroleum oil grease. ASTM dropping point of 480°F. Maintain consistency in service at high temperatures.

Mechanically stable—Maintain consistency even under severe mechanical working in service.

Chemically stable—Inhibit oxidation. Oil and thickening agent in combination possess extremely good chemical stability.

Wide temperature range—Lubricate at high and low temperatures. Extended range of application thus obtained makes RYKON Greases truly multi-purpose.

Water resistance—Do not lose consistency in presence of water. Highly resistant to water washout.

Oil separation—Minimum bleeding of oil in service and storage.

Anti-rusting—Exceptional natural rust preventive characteristics.

With RYKON Greases, lubrication can become simple, foolproof and less expensive—much less expensive, perhaps, than a single shut down caused by equipment failure due to the use of the wrong type of grease or the use of an "economy" grease lubricant.

RYKON Greases come in four Regular and three Heavy-Duty grades. Thus there is a RYKON Grease to take care of every grease lubrication job. Using RYKON Greases plant-wide can reduce your grease storage requirements, simplify lubrication maintenance training, cut down record keeping, save on dispensing equipment and reduce investment in grease inventories.

Get more facts about RYKON Greases. Call your nearby Standard Oil industrial lubrication specialist in any of the 15 Midwest or Rocky Mountain states. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

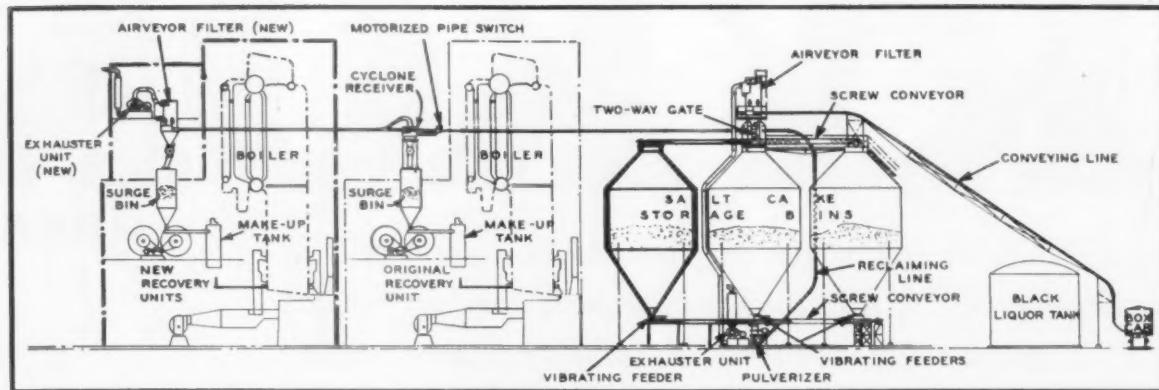
Check Chart Of RYKON Greases

Regular Line	Grade Consistency
RYKON Grease No. 0	0
RYKON Grease No. 1	1
RYKON Grease No. 2	2
RYKON Grease No. 3	3

Heavy Duty Line	
RYKON Grease No. 0 E. P.	0
RYKON Grease No. 1 E. P.	1
RYKON Grease No. 2 E. P.	2



STANDARD OIL COMPANY (Indiana)



Additions: Storage bin, center, shown in heavy line, and screw conveyors to and from bin. Left—recovery units, Airveyor exhauster unit and filter for reclaiming from storage for delivery to recovery units.

For expansion at St. Regis . . . Fuller had the answer

The above drawing illustrates how the St. Regis Paper Company, Jacksonville, Florida, increased its storage and conveying facilities at minimum cost and with little interruption in production.

PROBLEM No. 1: Unload salt cake from box cars, convey to storage, reclaim from storage and deliver to recovery unit. Mill capacity, 300 tons of pulp a day.
Original installation
Year 1952

SOLUTION:

The Airveyor conveying system was selected and installed to perform all of the above functions . . . a dual system using a single exhauster unit and filter for both unloading and reclaiming . . . only one of these operations to be performed at any one time. This method of operation was sufficient for all plant requirements at capacity then required.

PROBLEM No. 2: Increase of mill capacity from 300 tons to 1300 tons of pulp a day. This increase demanded additional recovery units, storage, and conveying alterations.
Expansion
Year 1955

SOLUTION:

To continue using the original Airveyor system meant taxing the unit to its ultimate capacity, as well as congestion in the operation of the recovery unit, with little or no factor of safety. In order to provide satisfactory overall operation at all times, it was decided to divorce the reclaiming system and provide separate units, one for unloading and the other for reclaiming. This allows the operator of the recovery unit freedom of operation without interfering with the unloading operation. This change was accomplished by retaining the original exhauster and filter for unloading, extending the screw conveyors to serve the additional storage. An additional filter, exhauster, and conveying line transformed the reclaiming system to a separate and distinct unit. These changes to the Airveyor were accomplished at minimum expense, with very little interruption in production during alterations.



Original Airveyor conveying system for both unloading salt cake from cars to storage and reclaiming from storage for delivery to recovery unit.

Visit us in Booth 717 at the
 National Materials Handling Exposition,
 Philadelphia, April 29 to May 3.



A-239
 3483



FULLER COMPANY

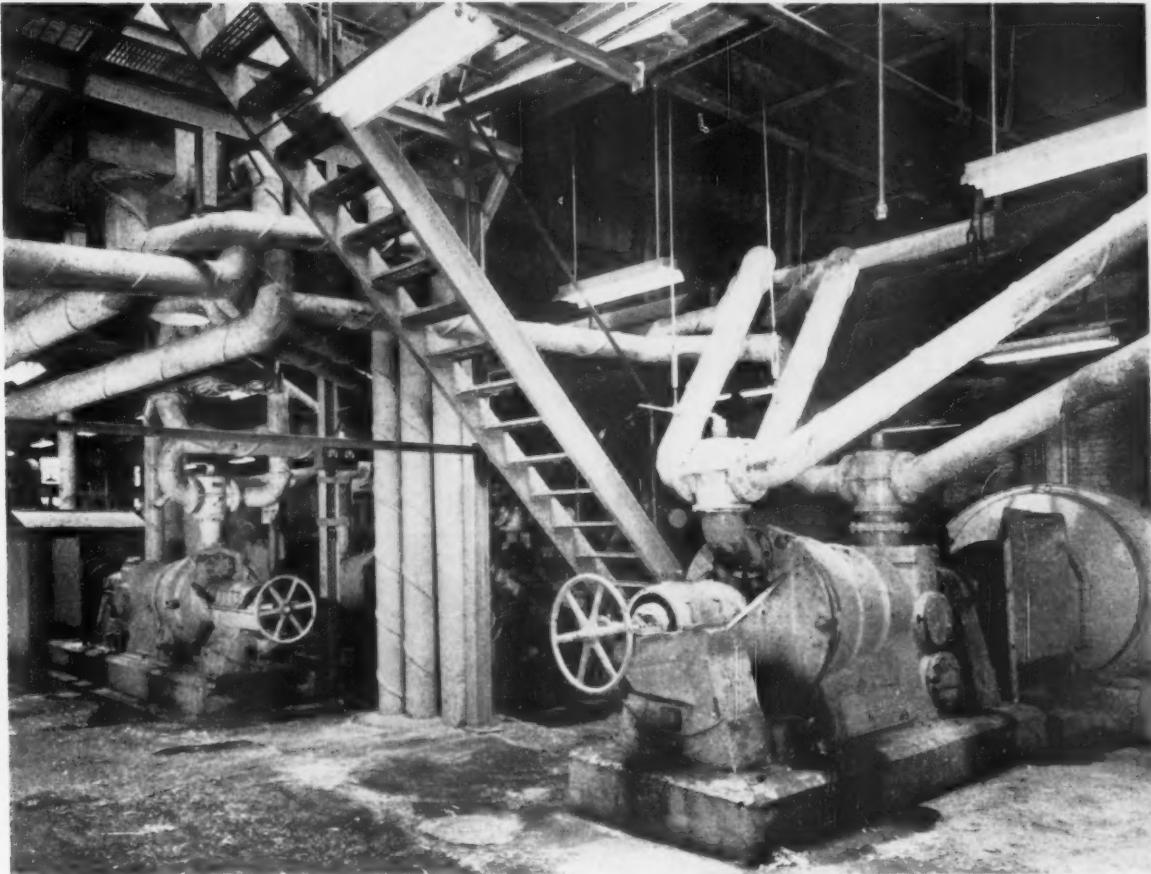
128 Bridge St., Catasauqua, Pa.

SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
 Chicago • San Francisco • Los Angeles • Seattle • Kansas City • Birmingham

April 1957 — PULP & PAPER

PERFECT FIT

In Close Quarters!



This picture shows how Naylor Spiralweld pipe and Naylor fabrication service combine to give you the practical answer when pipe lines must be installed in close quarters.

By combining pipe and fittings in prefabricated units, extra flanges and connections can be eliminated to cut installation costs. The accuracy of Naylor fabrication service guar-

antees perfect fit on both simple and complex layouts.

Whether you need stock pipe lengths, standard fittings, special fabrications or engineered layouts, look to Naylor to get exactly what you need in steel, alloys or stainless.

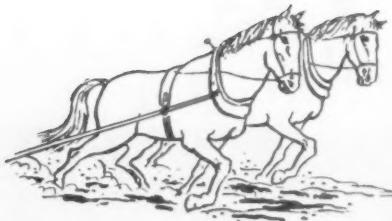
Write for Bulletins 507 and 525 or send specifications for quotation.

NAYLOR

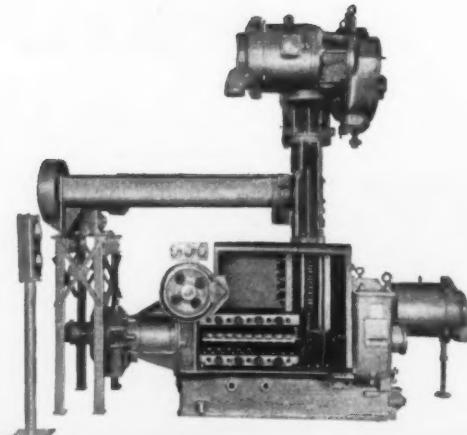
NAYLOR PIPE COMPANY
1271 East 92nd Street, Chicago 19, Illinois



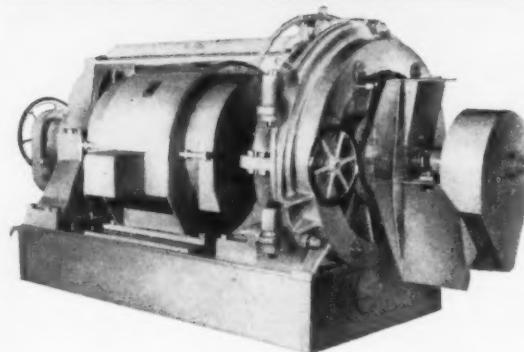
Eastern U.S. and Foreign Sales Office:
350 Madison Ave., New York 17, New York



**The Perfect Team for
semi-chemical
CHIP FIBERIZING
and the
REMOVAL OF
DISSOLVED SOLIDS**



**SW-ANDERSON FiberPress and
SPROUT-WALDRON Refiners**

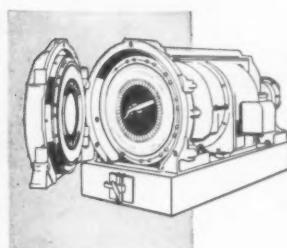


The perfect team for separating soluble solids and black liquor from semi-chemically cooked chips and for pulping is the SW-Anderson FiberPress and the Sprout-Waldron Pulp Refiner. They give you outstanding advantages over any other method.

1. More complete removal of black liquor and dissolved solids from chips in the two pressing stages of the FiberPress.
2. More complete fiberizing due to the method of transferring fiber from the vertical to the horizontal pressing stages in the FiberPress.
3. The choke-jaw design provides simple control of pressing without danger of plugging — a patented feature.
4. The strong, clean pulp produced makes the best paper and paperboard — bleached or unbleached. Let us prove this to you.
5. Pre-refining action reduces refining power requirements as much as 40%.
6. At least 10% higher production capacity with the same horsepower input.
7. No charring of chips or fiber when shutting down the FiberPress.
8. Simplest mechanical design and lower replacement parts cost.
9. Waste liquor removal lengthens wire and felt life.

To beat the stream pollution problem and to produce the finest semi-chemical pulp, install the S-W Anderson FiberPress and Sprout-Waldron Refiners in combination or separately. The FiberPress can be installed ahead of your present refining equipment. For complete details, write to Sprout, Waldron & Co., Inc., 32 Logan St., Muncy, Pa.

**S
W**



For your pulping problem —
**SW-ANDERSON FiberPresses and
SPROUT-WALDRON Pulp Refiners**

PP-7513

SPROUT-WALDRON
MODERN PULP PRODUCTION EQUIPMENT

Northeast Notes

EDWARD H. PETRICK, former general sales manager, West Virginia P&P Co., is now vice pres. i/c sales, Brown Co., headquartered in Boston. He's a chemical engineer, grad of U. of Pittsburgh, class of 1937. . . . **GENE TUNNEY** and Judge **CHARLES P. METAGUE**, directors of Brown Co., were elected directors of Granite State Veneer Inc., Plywood Products Inc. and the Stratford Realty Corp., wholly-owned subsidiaries of Brown.

PETER S. PAIN JR., son of President Paine of New York & Pennsylvania Co., Inc., has been selected as a Rhodes Scholar. He's now a senior at Princeton U. and will be entitled to study at Oxford, England. . . . **FRANK FLAIG**, supt., Nypen Lock Haven mill, died last February in Wilmington, N.C., while enroute to a Florida vacation.

HENRY W. STEINMANN has been promoted to chemical research administrative manager, Scott Paper Co. at Chester, Pa. . . . **DON FULLERTON** succeeds the late **JAMES JAMIESON** as boss machine tender, bond mill, Fraser Paper Ltd., Madawaska, Me. . . . **MARCEL A. CORDOVI**, head of the materials and testing dept., Babcock & Wilcox Co.'s Atomic Energy Div., will be principal lecturer on a course on the metallurgy of nuclear power reactor materials at Polytechnical Institute of Brooklyn's spring semester.

WILLARD G. LEATHERS has been named executive vice pres. of Doeskin Products, Inc. He was a former exec secretary of National Paper Trade Assn., joined Doeskin in 1955. . . . **HOWARD WRIGHT**, former sales engineer with Bauer Bros., is now plant engineer and tech. director for Doeskin's Rockland, Del., operation.

DICK TALBOTT, sales rep for R. T. Vanderbilt Co., recently married a United Air Line stewardess. They're honeymooning in Westport, Conn.

JOSEPH H. TORRAS, former asst. sales mgr., fine paper div., St. Regis Paper Co., is now sales manager. He joined St. Regis in 1951 with the kraft div. in Pensacola, Fla., was named resident mgr. in 1954 of the Kalamazoo, Mich., mill. . . . **WINFIELD I. McNEILL** has been elected vice president of Calkin & Bayley, Inc. . . . **GEORGE OLNSTED JR.**, president of S. D. Warren Co., received the 1956 Honor Award presented by Univ. of Maine P&P Foundation, "in recognition of his years of service to the pulp and paper industry. His energy and zeal in promoting and stabilizing the in-

dustry will be beneficial to all concerned for many years to come."

WARREN B. BULLOCK, manager of the Import Committee of the American Paper Industry, has retired after 33 years with the committee. . . . **MARVIN J. WINSHIP** has been promoted to market research director, Great Northern Paper Co. . . . **NORMAN H. "NORM" LAUGHRAY** has joined Black-Clawson's Dilt's div., at Fulton, N.Y. as technical service director. He was previously with Container Corp. of America, Kupfer Bros. and McLaurin-Jones.

JIMMY JOHANNESON, Swedish Cellulose Co., hopped off to Paris and Europe after Paper Week, but just one week later he was basking in the sun at Half Moon hotel, Montego Bay, Jamaica. . . . **HAROLD INGRAHAM** of Chas. T. Main and his wife flew to Nassau, the Bahamas, right from New York after the paper meetings. . . .

KEITH W. MAX, Continental Can Co., is new chairman of National Paperboard Assn. biological research committee. . . .

Midwest Medley

ABRAHAM LEWENSTEIN was elected v.p. of Appleton Coated Paper Co., Appleton, Wis. Other officers, all reelected, include **RICHARD W. MAHONY**, pres. and gen. mgr.; **JOHN P. REEVE**, exec. v.p. and mill mgr.; **EUGENE S. COLVIN**, v.p. and director of sales; **HERMAN B. BERGE**, v.p. and Chicago sales director; **MATT WEYENBERG**, secy.; **PERCY C. MENNING**, treas. and accounting mgr.; and **WILLIAM A. SIEKMAN**, asst. secy. and personnel mgr. . . . **E. E. ERD-**

MANN, v.p. of Badger Paper Mills, Inc., Peshtigo, Wis., and sales mgr. of Freshrap div., will serve another three-year term on the Wax Paper Merchandising council. . . . **W. J. FAHRENKRUG**, Badger's chief engineer, is a new member of the forestry advisory committee of the Wisconsin conservation dept. . . .

JAMES E. CALVIN has moved from asst. v.p. and mgr. of Mead Board Sales Co., Chicago office, to asst. to the pres. for Seaman Paper Co., Evanston, Ill. . . . Two new v.p.'s for Hawthorne Paper Co., Kalamazoo, Mich., are **FRED M. HODGEMIRE** and **LOUIS J. SLAVIN**. Mr. Hodgemire, gen. supt. for the past 32 years, will be in charge of production. Mr. Slavin, class of '55 from U. of Michigan, will be administrative v.p. . . .

GEORGE A. LITTLEFIELD has been elected exec. vice pres. in charge of operations for Allied Paper Corp., Chicago, and **JAMES H. McCLURE** has been elected v.p. . . . In Madison, Wis., **JAMES E. HENNING** was named vice pres. of Bjorksten Research Laboratories for Industry, and **IRVIN LEICHTLE** is administrative asst. . . . Promoted to director of industrial relations is **RICHARD D. WILLIAMS** of Gardner Board and Carton Co., Middleton and Lockland, Ohio. A native of Iowa, Mr. Williams has a bachelor's degree from Ohio Wesleyan U. and a master's from Northwestern. He's been with Gardner since 1949. . . .

HUGH D. BURNIE has been named mill chemist at Wisconsin Rapids Div. of Consolidated Water Power & Paper Co., replacing **JACK E. CHINN**, who is now asst. to the paper machine supt., according to **L. W. MURTFELDT**, asst. mill



"Give Charley there a hand in the acid plant!"

—continued

mgr. . . . **M. V. MOLSBERRY**, chief engineer, reports that **B. LYLE JACKSON** has joined Consolidated as asst. elec. engineer . . .

FRANKLIN MOORE JR. has joined Bergstrom Paper Co., Neenah, Wis., as counsel. Pres. **N. H. BERGSTROM** announced recently. The 38-year old lawyer has been asst. district attorney and district attorney for Winnebago county, is a combat veteran of World War II, and survived 11 days on a rubber life raft in the Pacific . . . Another newcomer to Bergstrom is **NORMAN C. YOUNG** of Wichita, Kan. Formerly with Coleman Co. of Kansas City, Mr. Young will be asst. controller . . .

Procter & Gamble has announced three appointments to the technical staff of new Paper Products Div., organized as a result of acquiring Charmin Paper Mills. **VICTOR MILLS**, formerly in charge of process development, is director of product development. **D. R. BYERLY** is associate director of products research and **H. J. PEDDICKORD** is associate director of process development . . . **FORD T. SHEPHERD**, v.p. for public relations at The Mead Corp., announces promotion of **RICHARD E. LOWE** to public relations staff in Dayton, Ohio. He has been supervising publication of the daily Mead Bulletin and monthly Mead Reporter. **A. RUSSELL POOLE JR.** replaces Mr. Lowe as editor of plant publications for the Chillicothe Div. . . .

LEWIS CLARK THOMSON, Champion Paper v.p., administration, and secy., has been elected to exec. committee of Western College board of trustees. His mother, **MRS. ALEXANDER THOMSON**, was president and board chairman of the Oxford, Ohio, college . . . Thilmany Pulp and Paper Co. has named **FRED HERBOLZHEIMER** to fill newly created position of production services supt. Mr. Herbolzheimer has bachelor's and master's degrees from U. of Maine, and was formerly production mgr. at Marinette Paper Co. mill . . .

Three new senior industrial engineers for Gardner Board and Carton Co., Lockland and Middletown, Ohio, are **WILLIAM H. BRICKNER**, grad of Case Inst. of Technology, Cleveland, **FREDERICK W. SUDHOFF**, U. of Cincinnati alum, and **JACK N. SCHLUETER**, a native of Davenport, Iowa. M.I.T. graduate **ROBERT WILSON** was promoted to staff asst. to the supt. at Gardner's Lockland carton plant . . .

WALTER FANTUZZI is now traveling to Wisconsin, Upper Mich., Ill. and

Minn. mills for Ohio Knife Co. He works for **JACK FIELD**, district mgr. of the Chicago office at 600 S. Michigan . . . New manager of the Cleveland Sales District for General Electric Co.'s Silicone Products Dept. is **K. JERRY MORRAY**, according to **J. T. COE**, dept sales mgr. Mr. Morray has a b.s. from the U. of Illinois, was formerly a sales and product planning specialist in the firm's Chemical Materials Dept. in Pittsfield, Mass. . . .

Pres **JAMES BOYD** of Manchester Machine Co., Middletown, Ohio, announces the appointment of Yale graduate **THOMAS A. JONES** as v.p. and gen. mgr. Mr. Jones had been div. mgr. of Hewett-Robins, Inc., Jones Div. . . . **GOEFFREY JOWETT** has been promoted to application engineer for Manchester. He was born in Montreal, joined the firm in 1955 as a draftsman . . . Wyatt Metal & Boiler Works has opened a sales office in Pittsburgh to serve western Pennsylvania, parts of New York, West Virginia and Ohio. **L. T. WILHELM**, a native of Houston, Tex., will be in charge . . .

JAMES B. CLARKE, Midwest rep. of National Aniline, who is based in Chicago offices and lives in Wilmette, went on vacation with Mrs. Clarke to Phoenix, Ariz., after Paper Week. **MICKEY McCOURT**, Consolidated W.P. & Paper Co., and Mrs. McCourt went to Clearwater Beach, Fla. . . .

Fifty-two newspapers are now carrying the syndicated column "Skillet Club for Men"—a column of recipes and cooking advice, written by **FRANK KOHLER**, who also assists his brother, **JOHN B. KOHLER**, in design and sales of high speed special winders and similar equipment for paper mills at Crystal Lake, Ill. . . .

MRS. BILL (MARIAN) McVICKER, whose husband is general purchasing director of Chillicothe Paper Co., rejoined her husband at Paper Week after a trip around the world with their son, Douglas, aged 13, in five months . . .

New Officers at Badger

After 29 years as president, general manager and treasurer of Badger Paper Mills, Inc., Peshtigo, Wis., **Edwin A. Meyer** has become board chairman, while **Walter F. Adrian** is taking over the posts formerly held by Mr. Meyer. Mr. Adrian has been executive vice president and assistant general manager since 1950. **Frank J. Lauerman** resigned as board chairman but will continue as a director.

Edgar E. Erdmann, sales manager



Changes in Midwest

Stanton W. Mead, pres., Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., announces these changes: **WILLIAM J. FOOTE** (left), former mgr. Wisconsin River div., becomes director, book paper manufacture. A graduate of Lawrence College, he has a ph.d. from the Inst. of Paper Chemistry, has been with the company since 1938. **L. W. MURTFELDT** (center), asst. mgr., Wisconsin Rapids div., succeeds C. E. Jackson as mill mgr. Mr. Jackson is retiring after 43 years with the company. Mr. Murtfeldt, an alumnus of Washington U., has been with the firm for 24 years in timberlands and manufacturing work. **STRATTON MARTIN** (right), secy. to vice pres., mfg., succeeds Mr. Foote as Wisconsin River div. mgr. Mr. Martin is a 1942 graduate of Ripon College and came with the company in 1946 as a tech. dept. chemist.

of the Freshrap division, and William J. Van Dyck, sales manager of the Fine Paper division, were named vice presidents. **E. A. Meyer Jr.** became secretary and **S. E. Eastman** was re-elected assistant secretary and assistant treasurer.

Badger's plans for 1957 call for construction of a two-story fireproof building to house installation of new reel and unwinding equipment for the extension of one of their paper machines.

Chaplin Elected President Of Allied Paper Corp.

Charles F. (Fred) Chaplin has been elected new president and sales manager of Allied Paper Corp. (see story page 50, March issue). Actually he will continue activity primarily in sales, as he was for several years. He lives in Northfield, Chicago suburb, where he was township president but last year he was elected a Cook County commissioner. Arnold H. Maremont continues as board chairman.

G. A. Littlefield, formerly of St. Regis Paper Co., is new executive vice president in charge of all paper manufacturing in three Kalamazoo mills and the Allied Albany (N. Y.) Division, formerly A. P. W. Paper Co. He recently joined Allied as comptroller.

W. A. Kirkpatrick is vice president in charge of engineering for all

paper operations, Herb Johnston is vice president in charge of all engineering and E. J. (Jack) Gilman is vice president in charge of the Kalamazoo operations.

Minard Joins Seaborne at Toronto for K-C

Guy Minard, vice president and mill mgr. of Spruce Falls Power & Paper Co., Kapuskasing, Ont., will be chief assistant to Fred Seaborne, in charge of all Kimberly-Clark operations in Canada, stationed in Toronto offices. PULP & PAPER previously announced Mr. Seaborne's move to Canada.

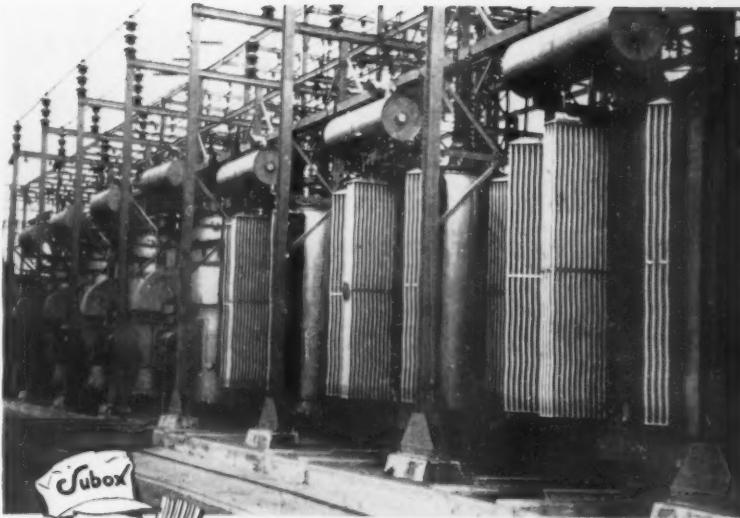
Fred Flatt has succeeded Mr. Minard as manager of the Spruce Falls mill. Fred Willey succeeded Mr. Flatt as woodlands mgr. for Spruce Falls.

Southern Sidelights

The Southern Exposure: **JIMMY GARRETT**, paper mill supt. at I.P. Louisiana mill in Bastrop, has been promoted to assistant to Southern Kraft Div. paper mill coordinator. He will continue to live in Bastrop, travel throughout the division. **D. P. HINDMON**, first asst. paper mill supt., takes his place and **EUGENE LOFTIN**, paper mill tour foreman, moves into Mr. Hindmon's position . . . **REUBEN ROBERTSON, JR.**, onetime president of Champion Paper & Fibre now serving as deputy Secretary of Defense, will resign his government post in August and return to Canton, N. C., mill where he will resume his former position as president, succeeding his father, **MR. ROBERTSON, SR.**, who took over when the younger Robertson went to Washington.

J. M. WILLIAMS, supt. of Binghamton mill of Buckeye's Cotton Oil Div. at Memphis, succeeds **W. E. TIMMONS** as industrial relations supervisor at Buckeye's Foley, Fla., mill. Mr. Timmons goes to Memphis as mgr. of accounting April 1 . . . National honors went to Union Bag-Camp for its Keep Savannah Clean campaign (providing filling stations with free paper bags for disposal of trash from cars, reported here last month) in the form of a special citation from Keep America Beautiful, Inc. "Jedge" **KIRK SUTLIVE** was on hand to accept honors . . . Speaking of Union Bag-Camp, they recently made headlines when the company donated \$25,000 to Savannah's Armstrong College, the biggest donation to date . . .

New promotions announced by St. Regis for its Jacksonville mill (soon to start up the big "Seminole Chief" paper machine, reportedly the largest in the world) are: **A. K. DAVIS**, from shift eng. to asst. chief power eng.; **W. R. GRAY**, former purch. clerk, now asst. purch. agent; **C. E. GUTTRY**, onetime pulp mill



SUBOX PAINTS ACTIVELY WORK TO PROTECT

Only Subox paints are made with lead-suboxide. This colloidal pigment achieves maximum surface penetration . . . packs to form a dense, impervious coating. Moreover, it is chemically active . . . actually works continuously to combat corrosion.

Too, Subox paints deflect external heat and radiate internal heat, thereby keeping metal surfaces cooler. This quality is particularly important in the protection of such property as transformers, power plant and sub-station equipment.

Subox paints assure protection and economy in a way that no other paint can give. They are easily applied by brush, spray or flow-coating and endure for many years: they do not crack, chip or blister, even under the most severe conditions. Available in attractive modern colors.

Write for booklet: "Subox Paints".

SUBOX PAINTS



Established 1924
Fairmount Plant
Hackensack, N. J.

cook, now pulp mill tour foreman; **F. L. MURRAY**, from instrument leaderman to asst. instrument eng.; **R. CLEMENTS**, onetime power house supt., now chief power eng. . . . **WALTER B. HOPE** has been appointed Southeastern regional mgr. for Bulk Corn Products Div. of Anheuser-Busch, Inc., succeeding **CHARLES CONNER, JR.**, who resigned to go into his own business . . . **JOSEPH SHIMP, JR.**, plant mgr. of Scott Paper's

Mobile Hollingsworth & Whitney Div., due congratulations after receiving an alumni citation from alma mater Drexel Inst. of Tech. for industrial leadership.

Mark this one down in your book as one of the more unique hobbies among papermakers—**ADRIAN SCHENCK**, instrument inspector at Bowaters Southern, relaxes by shooting fish from a boat with a bow and arrow, a trick he learned during the war in Hawaii. He also collects

Heads Bowaters New Mill

JOHN G. ROBINSON, former hardboard supt. for Weyerhaeuser Timber Co. in Oregon, is supt. of Bowaters Hardboard Co. at new mill in Calhoun, Tenn., adjoining the multi-million dollar newsprint mill there.

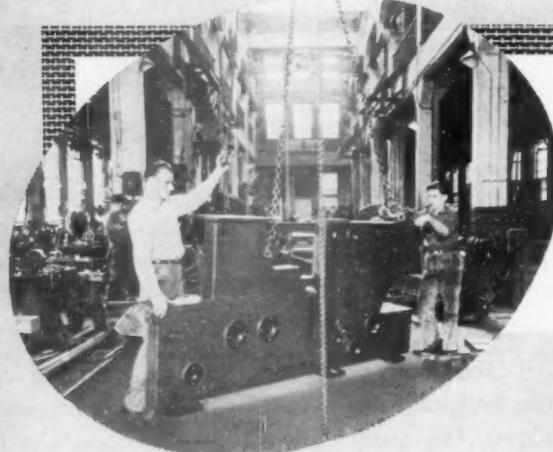


bows and arrows of all kinds, has a collection of both interesting and historic value . . . And papermakers at Olin Mathieson's Pisgah Forest mill are justified if they think they're seeing triple—**RAY, RALPH** and **ROY SINGLETON** recently returned to the paper division after two years in the Navy. They are triplets, look exactly alike, do the same kind of jobs, dress alike and even drive the same make and model cars!

I.P.'s Natchez mill employs a neat gambit for promoting safety—whenever the mill goes a month without a lost time injury, employees get free coffee or soft drinks in the commissary for one entire day. It works, too. Natchez chalked up perfect safety records in December and January.

East Texas Pulp & Paper Co. has made a precedent-making agreement with an East Texas hunting, fishing and conservation group, permitting it to hunt, fish and what-have-you on a 40,000 acre tract of South Texas timberland . . . Southern Editor Bill Diehl recently enjoyed lunch at Eastex with several other visiting firemen, among them **H. F. McELROY** and **J. R. FIELDING**, Union Bag-Camp engineers currently on a tour inspecting paper machines in preparation for No. 7 at Savannah, **CROWLEY WILLIAMS**, res. mgr. at West Virginia's Covington mill, **R. F. LONGBINE**, Covington paper mill supt., **W. M. THOMPSON**, Covington's research dir. Mgr. **BUFF NATWICK** and asst. **RAY BROWN** were the hosts . . . **WILLIAM N. PAULEY** has been named a partner in the firm of **H. E. BOVAY, JR.**, consulting engineers . . . **ELMER LEAVITT**, mgr. at North Carolina Pulp Co., succeeds **BOW BOWEN** as official corporate representative in the company's technical assoc.

REED O. HUNT, exec. vice pres. of Crown Z, was elected president of St. Francisville Paper Co., St. Francisville, La., CZ-Time's jointly owned company formed to manufacture quality coated printing papers. Other officers: Vice Pres. **A. B. LAYTON**, pres. of Crown Z, Vice Pres. **H. F. CARPENTER**, CZ's mgr. for printing papers, Secy. **D. R. SCHMIDT** and Treas. **H. E. NYLUND**, both CZ executives, Controller **L. F. BECKERS**, asst. controller for CZ, Asst. Secy. **C. S. CULLENBINE**, sec-counsel of CZ's Gay-

"From ingot to fourdrinier wire"**HAIRSPRING ACCURACY — BRIDGE-BEAM SIZE**

Our machine shop doesn't make hairsprings or bridge beams, but our maintenance and construction operations demand equal versatility from our men and machines. Hub of an integrated operation such as ours, its skilled personnel are ready to machine a part to a fraction of a thousandth of an inch, on a tiny instrument part or a huge loom frame.

Because our plant is *completely integrated*, every wire we ship has undergone thorough and continual analysis, control and testing from the raw metals to your finished fourdrinier wire ready for quality paper production.

We are proud to say they are *truly ours* — "from ingot to fourdrinier wire."

EASTWOOD-NEALLEY CORPORATION
Belleville, N. J.

lord Container Div. St. Francisville board of directors consists of **CHARLES L. STILLMAN**, exec. vice pres. and treas. of Time Inc., **DAVID DRUMBAUGH**, vice pres.-secy. of Time, Mr. **LAYTON** and Mr. **HUNT** . . .

Democratic National Committee officers were in a room right between various pulp and paper association meeting rooms at the Waldorf during Paper Week. **A. G. "BUFF" NATWICK**, v.p. of East Texas P.&P., was outraged when accused of coming out of the Demo room—he insisted he was just walking by . . .

BRUCE ARMSTRONG, former plant engineer with P. J. Schweitzer Co., Spotswood, N. J., and for past 8 years with Jackson & Church, has joined the staff at Univ. of Florida, Gainesville, Fla., as consultant on pulping. His special "pet" will be a new continuous digester without valves, to make all range of pulps from full cork to semi-chem. A 3-ton unit will be used. He was born in New York City, graduated from Columbia and started out as a mining engineer . . .

ED NUNN, manager of the new Francisville, La., Paper Co. mill being built by Time Inc. and Crown Z, will not move to the Southern post until September. He is now manager of CZ, Carthage, N. Y., and was previously planning to move in June . . .

JAMES D. GRIGGS is new Southern district sales service mgr. for kraft paper and bags, Forest Products Div., Olin Mathieson Chemical Corp. . . . **CLIFFORD T. FOGARTY** has joined Morn-



Top Execs in National Container

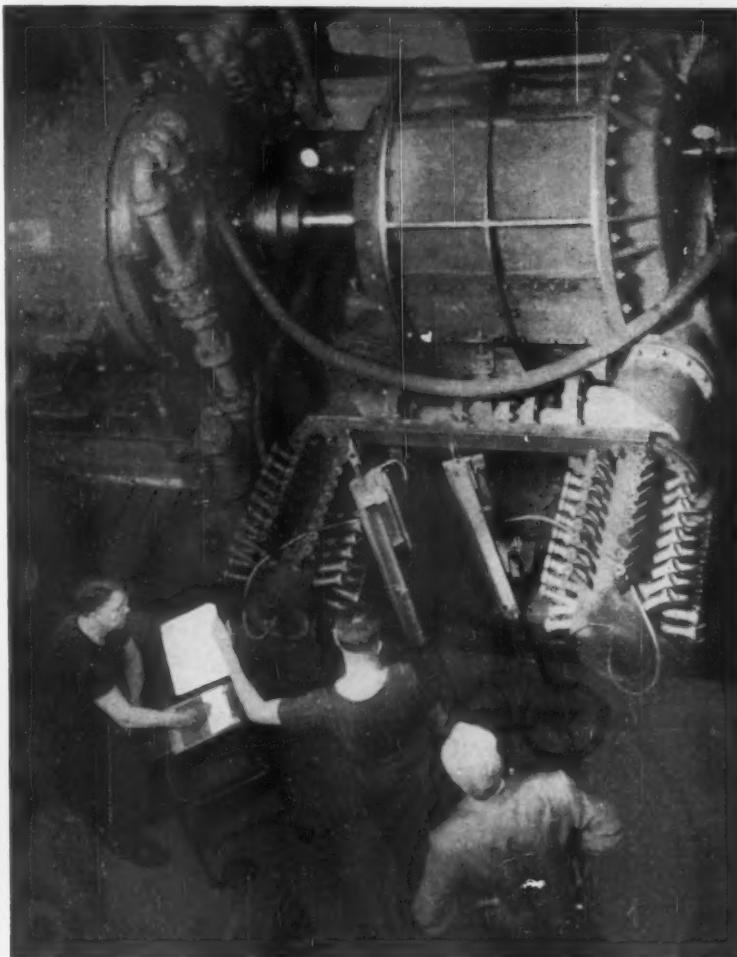
Key executive assignments in National Container Corp., new subsidiary of Owens-Illinois Glass Co., have been announced by **Hugh C. Lambkin**, exec. vice pres. and president of National Container.

LESTER R. EDWARDS (left), New York, of National Container, is general manager of the subsidiary, with jurisdiction over sale of corrugated boxes and converting plants which manufacture them.

GEORGE J. SCHNEIDER (middle), Los Angeles, exec. vice pres. of National Container of California, is its general manager with responsibility for West Coast box plant operations. His office will continue to be in Los Angeles.

C. G. McLAREN (right), vice pres. of O. I.'s new Mill Division, is general manager of its mills and woodlands operations in Wisconsin, Virginia, Georgia, Florida, and the Bahamas. His headquarters will be in Toledo.

Rated performance of every Nash Vacuum Pump is assured by this precise laboratory test



Rated capacities of Nash Vacuum Pumps are not theoretical. Every Nash Pump is tested individually. Air capacity is determined by delivery thru accurately machined and calibrated orifices. Related vacuum is measured by precise mercury column, and horse power is recorded electro-dynamically. Records of these tests are retained by us, and certified copies are available to Nash Pump owners.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

440 WILSON ROAD, SO. NORWALK, CONN.

STRICTLY PERSONAL

continued

ingstar, Nicol, Inc. as southwestern rep. He will base out of Dallas and service mills in La., Ark., Tex., Okla., Kan., Colo., and the southern parts of Ind. and Ill. Born in Chicago, Mr. Fogarty studied mechanical engineering at Northwestern U. . . . **JOSEPH J. LENGYEL**, sales mgr. of General Electric Construction Materials Div., announces the appointment of **JAMES S. HURLBURT** as mgr. of the

div.'s southwestern district, succeeding **CHARLES W. MALEDON** who died recently. Mr. Hurlburt, a graduate of Bucknell U., has been with G. E. since 1934. He will cover Tex., Okla., La., Miss. and parts of N. M., Ala. and Fla., working out of Houston, Tex. . . .

PAT YUNKER, Southern rep for E. D. Jones & Sons, tells about the guy who was applying for a selling job. The inter-



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Barking Drums
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Chippers
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Chip Screens
Knot Screens
Stainless Steel Flat Screens
Pulpwood Slashers
Hydraulic Wood Splitters
Quick Opening Gate Valves
Roll Heading Machines
Pneumatic Winder Shafts
Mechanical Winder Shafts
Hydraulic Roll Lowering
Tables
Power Dam Gate Hoists
Plus
GRID Unit Heaters
GRID Blast Heaters
GRID Radiators

Designed for pulpmills processing logs that are too large in diameter to be handled by the chipper, the MURCO Hydraulic Wood Splitter does the job so that handling and number of operations are reduced to a minimum. It is equipped with a Star type stationary axe that quarters the wood in one stroke . . . capacity approximately one log per minute (based on the calculation that it takes about thirty seconds to load the machine with the log to be split). Extremely heavy construction, this is equipment designed for heavy duty . . . base is an all-welded design from structural steel . . . axe knives are steel plate flame hardened and strongly reinforced to withstand the impact of splitting . . . cylinder and ram of heavy duty construction. Overall dimensions of MURCO Hydraulic Wood Splitter for 36" diameter wood 5' 3" long are 21' long x 5' 2" wide, x 5' 8 1/2" high.

Write for proposal and quotations to meet your pulpmill requirements . . . specify maximum diameter and length of wood to be split.

**D. J. MURRAY
MANUFACTURING CO**
Manufactured Since 1883
WAUSAU, WISCONSIN

viewer leaned forward and asked intently: "Do you drink anything?" The interviewee leaned back with an ecstatic smile and replied: "Anything." He's still looking for a job.



Project Engineer for New Mill

LELAND F. MAYBACH, plant engineer, Crown Zellerbach's new Antioch, Calif., moves into another major construction post only a short time after Antioch's startup. He goes to St. Francisville, La., as project engineer for the new St. Francisville Paper Co. book paper mill being jointly built by Time Inc. and CZ. Mr. Maybach was at Camas before Antioch and his background has been basically instrumentation. He was project engineer at Antioch during construction. **ED NUNN**, Carthage, N.Y., manager and former West Linn, Ore., asst. mgr., is St. Francisville resident manager. **LEONARD B. GREGOR** moves up from chief electrician to plant engineer at Antioch.

Pacific Patter

REX A. MORRIS, tech. asst to paper mill supt. tissue dept., CZ Camas, transfers to Crown's Lebanon, Ore. plant as acting tech. supervisor . . . **JOHN W. MULKEY**, asst. controller of CZ, was honored with a retirement dinner at Crown's West Linn Inn recently, 48 years and 8 months after having started work at West Linn mill as construction hand. Exec. Vice Pres. **REED O. HUNT** presented him with a retirement plaque . . .

ALLEN HALLER, former tech. asst. to paper mill supt. at West Linn, transferred to CZ's Lebanon division as Orzan production supervisor, a new position . . . **DAN BEASLEY** promoted to tech. asst. to paper mill supt., CZ West Linn . . . **EDWARD H. WALTHERS** becomes manager of Crown Z's distributor sales div., San Francisco, succeeding **G. S. RUNYAN**, who became vice pres. for general paper sales . . . **JOHN A. BETTS**, at CZ Camas, promoted to supervisor of paper machine and beater room maintenance filling vacancy occurring when **MAX BROWER** was promoted to project engineer . . . **CHARLES DODGE** becomes asst. safety supervisor at CZ Camas, a newly created position . . .

ROD WILLIS, manager of Northwest

Filter Co., Seattle, has been making a name for himself in yachting circles. He bested a large field to take top honors in the mid-winter Bremerton heavy weather cruiser race. This is a predicted-log event where slide rule, tide charts, winds and boat performance data are used to compute expected finishing time. Rod not only was the first yachtsman to submit his predictions but finished in first place as well, topping 111 entries. His feat is all the more remarkable considering his 32-foot cruiser sustained a gaping hole in her hull a few days before the race. Last-minute repairs proved successful.

Regarding the awarding of TAPPI's Gold Medal for 1957 to JOHN D. RUE, consultant and former sales and production executive for many years with Hooker Electrochemical Co., GUNNAR NICHOLSON, president of Tennessee Paper Mills, said "kraft bleaching in this industry was advanced ten years as a result of work which John Rue did in that field, particularly in development of pre-chlorination techniques."

PETER CALOTT has joined tech. sales dept. of Penick & Ford Ltd., Inc., will live in Portland, Ore. . . . CORNELIUS R. DUFFIE was appointed mgr. of Western Kraft Corp.'s pulp and paper mill north of Albany, Ore. Mr. Duffie was chief engineer for Pennsalt in Portland. He is a grad of U. of Washington, served as a commander of a landing craft in the Pacific during World War II . . . B. P. ALTICK, vice pres., Fibreboard Paper



In Industry News

THEODORE D. BIELFELD (left) has been appointed sales representative on Rayonier's expanded woodpulp sales staff, announces Michael A. Brown, general sales manager. Rayonier has become an important supplier to the paper industry as part of a diversification program, Mr. Brown said. Before joining Rayonier in 1953 in accounting dept., Mr. Belfeld had been at Thule, Greenland, with North Atlantic Constructors.

JOHN B. CALKIN (right) is president of a new firm of industrial consultants formed by him and George T. Bayley. Calkin & Bayley, Inc., 50 East 41st St., New York, will specialize in marketing and economic research, product and market development, process development and design, business and plant surveys, analysis and testing. Industries to be served include pulp and paper. Mr. Calkin has had a consulting office in New York and was formerly with Foster D. Snell, Inc. He was educated at U. of Maine, M.I.T., and Cornell.



Southland Paper Mills, Inc.
again calls on Goslin-Birmingham

Southland Paper Mills, Inc. realized a need for added evaporation capacity. Goslin-Birmingham engineers were called in for consultation with Southland's engineering department. A comprehensive study showed how an addition to the existing G-B evaporator would accomplish the needed additional capacity. The addition of two new bodies and a surface condenser provided the needed extra capacity with a **MINIMUM INVESTMENT**.



When you have an evaporator problem, take advantage of G-B's experience. There's no obligation. Let G-B serve you as it has scores of others.

GOSLIN-BIRMINGHAM
MANUFACTURING CO., INC.
BIRMINGHAM • ALABAMA

Products Corp., announces the appointment of **CLYDE W. KING** as mgr. special marketing projects, with headquarters at 290 26th St., Oakland. Mr. King is an Annapolis graduate, class of 1922 . . .

C. S. CULLENBINE was elected secretary of Crown Zellerbach Corp., replacing **D. R. SCHMIDT** who was appointed gen. mgr. of Canadian Western Lumber Co. Ltd. A native of Beardstown,

Ill., Mr. Cullenbine received both his undergraduate and law training at Washington U. in St. Louis, Mo. He joined Gaylord Container Corp. in 1943, became secretary and counsel of Gaylord and exec. asst. to the board chairman. (Gaylord merged with CZ in late 1955) . . . **WARDELL S. DUGGAN**, supervisor of sales promotion, Simpson Paper Co., Everett, Wash., has been appointed acting



In Canadian News

JOHN WINDEBANK (left), for past five years coordinator of mill personnel for Canadian International Paper Co. in Montreal, has been appointed mgr. of industrial relations for Ontario-Minnesota Pulp & Paper Co. at its various operating locations, including the mill centers of Fort Frances and Kenora, Ont.

L. S. MCGILL (right), former gen. personnel supervisor for Crown Zellerbach Canada, is new mgr. of administration at Columbia Cellulose Co.'s high alpha pulp mill in Prince Rupert, B.C. Mr. McGill joined CZ's Pacific Mills div., Ocean Falls, over 20 years ago, took time out for World War II service with the Royal Canadian Air Force.

commander of artillery for the 104th army reserve division. Mr. Duggan holds the rank of colonel.

EVERETT REICHMAN, ch. e. from Montana State U., is now supt. at Simpson Research Laboratory, Shelton, Wash. He has been in research for Simpson since 1945, was previously with Rayonier at Shelton . . .

Canadian Column

P. M. BOULTON, former mgr. newsprint sales for Consolidated Paper Sales, Ltd., has been named v.p., succeeding **A. L. DAWE** who retired after 35 years of service. **A. M. GAMMELL**, who joined the old Laurentide Co. in 1912, is the new mgr. of newsprint sales, with **R. J. FLOOD** as asst. mgr. . . . Returned to Montreal to take over another extensive position with Anglo-Paper Products Ltd. is **DR. ALLEN HILL**, long associated with the Anglo-Canadian Pulp & Paper Mills operations and former mgr. of Gaspeia Sulphite Co. at Chandler. . . .

The Pulp & Paper Research Institute of Canada at Montreal announces new departments and appointments. **DR. RAIMBAULT DE MONTIGNY** is first chairman of the new Tech. Services Dept.; **DR. W. H. GAUVIN** will head the new Chem. Engineering Div. . . . **DR. LEO YAFFE**, assoc. prof. of chemistry at McGill, is now consultant in radiochemistry for the Institute. **DR. J. E. STONE**, formerly with the Institute of Paper Chemistry in Appleton, is new asst. head of the Chemical Pulping Div. **GEORGE W. LEGG** is now assoc. chemical engineer in the Chemical Pulping Div. Senior mechanical engineer in the Woodlands Re-

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search Dept. is **DAVID R. ELLIOTT**, who will work on the design and development of mechanized methods and equipment. . . .

W. T. POUND, one of several St. Lawrence Corp. executives recently promoted by Pres. **P. M. FOX**, has been made vice pres., manufacturing. **L. A. TUCKER** has been appointed vice pres., comptroller and treas.; **C. D. JENYZ**, vice pres., newsprint, and **T. E. MOLYNEUX** chief engineer. . . . **J. W. McNUTT** of North Bay, Ont., was recently elected president of the Ontario Forest Industries Assoc., with **B. F. AVERY**, president, KVP Co., Espanola, and **H. H. STYFFE**, Port Arthur, vice presidents. Representing the pulp and paper industry on the new board are **C. B. DAVIS**, Abitibi Power & Paper Co.; **P. V. LEMAY**, Marathon Paper Mills of Canada; **E. L. GOODALL**, Dryden Paper Co.; **J. H. MERRILL**, CIP; **H. A. SEWALL**, Ontario Paper Co.; **J. F. MCKELLAR**, Ontario-Minnesota Pulp & Paper Co. . . .

J. D. S. MacDONALD has been appointed supt. of finishing and shipping at Canada Paper Co.'s mills at Windsor Mills, Ont. . . . **DR. HANS KRAESSIG**, associated for several years at the Univ. of Freiburg with Prof. **HERMAN STAUDINGER**, Nobel Prize winner for basic research in the field of synthetics, now heads the subsidiary of Canadian International Paper Co. devoted to basic industrial cellulose research at Hawkesbury, Ont. . . . **B. W. POWER**, treasurer and director, the Eddy Paper Co., Hull, Que., has been appointed vice pres. of the company and also vice pres. of finance of its subsidiary, the E. B. Eddy Co. . . . **H. A. PATERSON** has been named gen. supt. of Mersey Paper Co., now one of the Bowater group of mills in Canada. He succeeds **ROBERT GASGOIGNE**, recently retired although he will continue in a consulting capacity. **J. H. POTTIE** is assistant gen. supt. and **G. W. ROBINSON** control dept. supt. . . .

GEORGE A. HOLLAND has joined Prairie Fibreboard Ltd., Saskatoon, as gen. mgr. A native of London, Ont., Mr. Holland has been in the paper box industry for over 20 years. **VANCE G. ELLIS** has been elected vice pres. of Prairie Fibreboard. The new \$3,000,000 plant is expected to go into production in mid-summer. . . . **J. BRUCE BROWN**, pres., Inter-City Papers Ltd., announces the appointment of **P. W. ROBERTSON** as vice pres. and gen. mgr., Columbia-Clark Papers Ltd., Vancouver. The firm coordinates the activities of Columbia Paper Co. Ltd. and Clark Papers Ltd. . . .

R. M. BISHOP, until recently development engineer with Anglo-Canadian Pulp & Paper Mills at Quebec, has been named development supt. for Dryden Paper Co., according to announcement by **E. LORNE GOODALL**, pres. and gen. mgr. Mr. Bishop joined Dryden last year.



New Old-Timers at Powell River

HAROLD S. FOLEY (standing sixth from left), board chairman of Powell River Co. Ltd., is surrounded by 13 new members of the British Columbia's firm's 25-Year Club during recent award ceremony. Several members of the club have been with the company for over 40 years.

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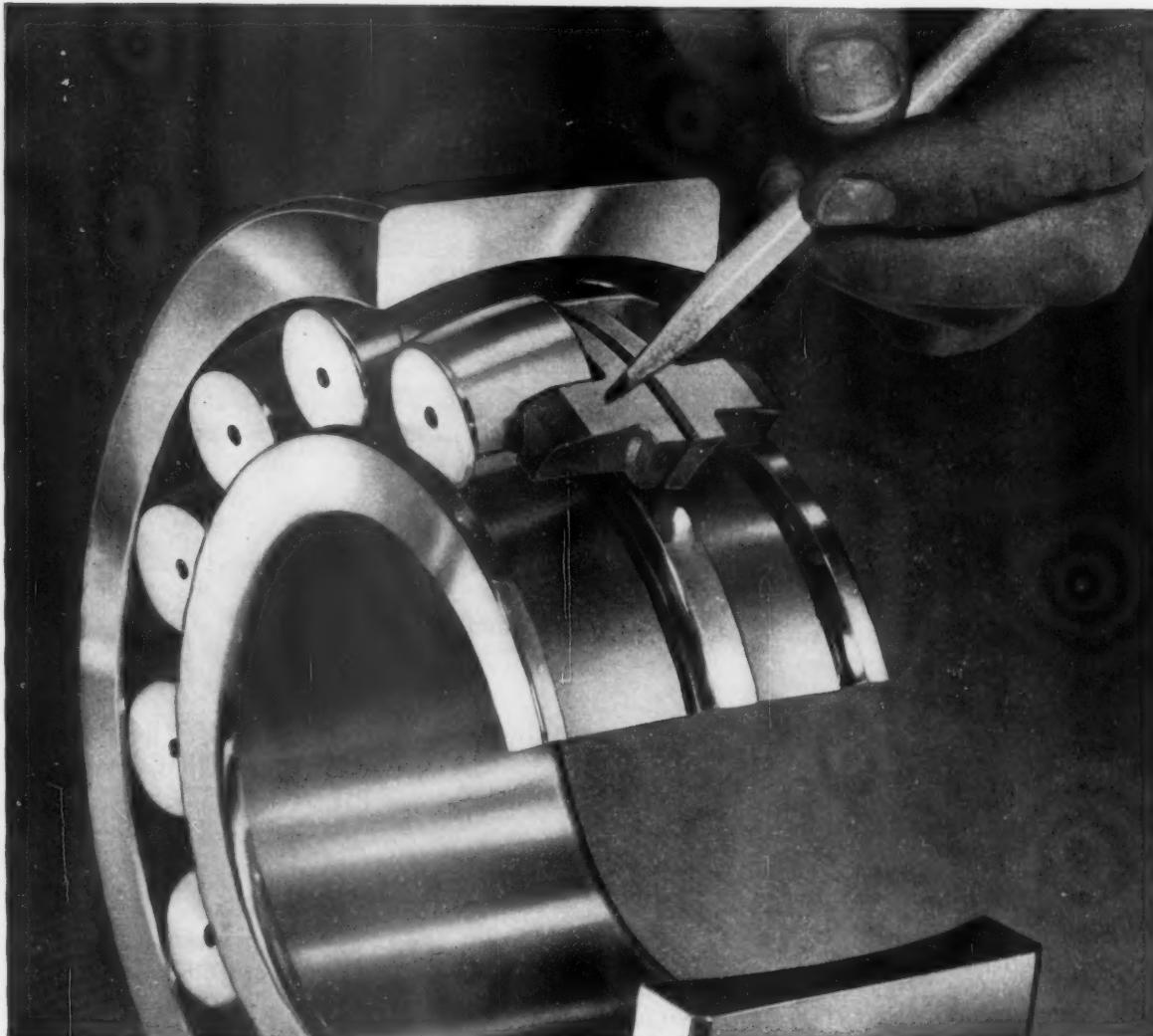
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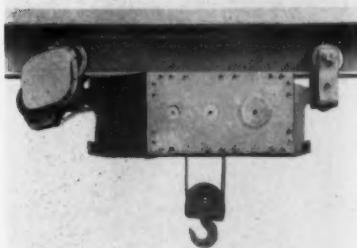
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April 1957 — PULP & PAPER

New Heavy-Duty Hoist Line



A new line of improved hoists, requiring 37% less headroom and offering precision load control to within .008 in., has been introduced by R. G. LeTourneau, Inc. Low headroom feature is achieved by a flat-lying U-shape arrangement of the motor, gear box and drum. The motor and drum are parallel-mounted on the same side of the gear box, permitting the load block to retract between them. Thus, with a trolley-mounted hoist of from 3 to 7½ ton capacity, the distance between rail and load-carrying eye of hook measures only 21 in.

The hoists are built for all-weather operation and are available with plain trolley, hand-gear trolley, motor trolley, deck, lug and hook mountings. Write to R. G. LeTourneau, Inc., 2399 S. MacArthur, Longview, Tex.

**Low-cost, small sized
Instruments**



Fischer & Porter Co. announces a new line of low-cost, small sized instruments for indicating, transmitting and controlling pressure and temperature. The new line, Series 1450, will be housed in cases made of plastic-impregnated glass fiber. Temperature range of 1450 Series is from minus

400°F. to plus 1000°F.; pressure range is from 30" Hg vacuum to 5,000 psi. As pneumatic receivers, 1450 instruments can accommodate 3 to 15, 3 to 18, or 3 to 27 psi signals. The 1450 Series will be available on a four week delivery schedule starting in May 1957. Write to Fischer & Porter Co., 951 Jacksonville Rd., Hatboro, Pa.

Crane-Shovel Attachment

The "Quick-Way" Truck Shovel Co. has a new hydraulic reaching, grading, digging attachment for crane-shovels, called the Chore-Master. Its telescoping boom which mounts on a special gantry and, is interchangeable with other standard attachments, extends to a radius of 33-ft. with the bucket open or 21-ft. retracted. Quick-Way is at Box 1800, Denver 1, Colorado.

To Handle Bulk Loadings



A new transportation technique consists of loading jumbled cans or other single-size products into a removable and re-usable compartmented box or "liner" that in turn fits snugly inside a truck trailer. By means of a small, reversible "Trailer-Bak" conveyor, secured to the trailer bed, a loaded liner can be moved into the trailer for shipment and out again at destination for unloading. This liner can also be loaded while in the trailer through hatches in trailer roof. The "Trailer-Bak" conveyor, which makes the new technique possible, was developed by Link-Belt Co. and consists of two slat conveyors that travel at 12.8 fpm to form a smooth, gentle moving platform. The complete "live-bottom" device, exclusive of motor, stands just 8 1/6 in. above trailer floor when installed. Attached by several hold-down bolts, the unit is completely portable and can be removed readily to make

the trailer available for other forms of transportation.

New Pressure Transmitter



An inexpensive indicating pressure transmitter, accurate to $\pm \frac{1}{2}\%$ of scale range, has been announced by The Foxboro Co., Foxboro, Mass., for pneumatic transmission of process pressure measurements. Known as the Model 44 Pressure Transmitter, it measures pressures of 0-30 in. of water to 0-6,000 psi, transmitting a 3-15 psi air signal to indicating, recording or controlling instruments. To accommodate the various ranges, a choice of standard Foxboro pressure elements is offered—spirals, helicals, bellows and diaphragms; element materials are available for corrosive process fluids.

Eliminating the need for a separate field gauge, the transmitter has an eccentric indicating scale, 4 1/2 in. long, built into the front of the case. Red pointer and black-on-white scale markings are visible from as far away as 20 ft. to provide indication at point of measurement. Complete information on request.

Cut Draining Costs

Spent acids and other liquid wastes are being drawn off more economically in polyvinyl chloride piping, it is reported. Changes in direction are made with socket type solvent welding drainage fittings developed by Tube Turns Plastics, Inc., Louisville, Ky. Sizes of the new PVC drainage fittings

NEW EQUIPMENT and SUPPLIES

range from 1½ in. through 4 in. They match Schedule 40 PVC pipe of corresponding dimensions and are available in the form of elbows, T's, Y's and other standard branch connections.

PVC pipe and most PVC fittings are said to cost less, require less labor, tools and material and fewer joints, are lightweight, easy to handle, eliminate breakage, and provide unimpeded flow conditions.

The socket type solvent welding fittings are made by an exclusive in-

jection molding process owned by Tube Turns Plastics, Inc. The company is owned jointly by National Cylinder Gas Co., Chicago, and Jackson & Church Co., Saginaw, Mich.

Conduit Clamp Bracket

T. J. Cope, Inc. of Collegeville, Pa., has a new bracket to be attached to side of cable trough section or fitting for the support of cable, conduit or piping when crossing the side of the trough. The new clamp is said to be



This Gilbert and Nash Model 434 guide is geared for today's high-speed production requirements. A sealed planetary reduction gear and anti-friction bearings assure trouble-free operation at machine speeds up to 3000 f.p.m.!

This low-contour guide is recommended for wire, wet felt and dryer felt service.

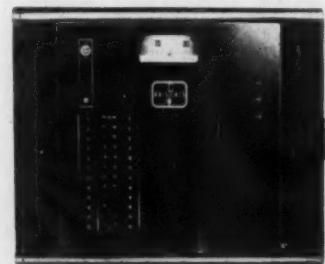
And like all Gilbert and Nash guides . . . Model 434 is engineered for the job!

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particularly useful when modernizing or expanding existing electrical distribution system as it simplifies combining a cable trough support system with other types of cable supports. Advantage of cable troughs is to permit higher cable current air ratings because air is free to circulate around cables and disseminate heat when generated.

New Multiple Indicator



A new drum-type precision indicator for quick readings of variables at remote points has been announced by Bristol Co., Waterbury, Conn. It uses the Bristol standard Dynamaster electronic instrument components, and is equipped with numbered push button switches on the front of the case, and can scan up to 48 remote points quickly. The revolving drum-type scale has a calibrated length of over 26 in. Full-scale travel takes place in 4½ seconds (details in Bulletin P1245A).

Heavy Duty Fork Truck



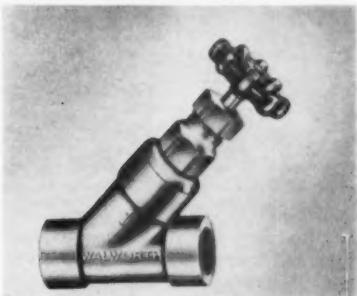
The Ranger-200 is a 20,000 lb. capacity pneumatic-tire fork truck with 4-wheel drive and finger tip direction controls now being made by the Industrial Truck Div., Clark Equipment Co. Designed for heavy duty in mud and rough terrain, it has a 4-speed power shift transmission and torque converter with 3-to-1 multiplication. For information, write to Clark at Battle Creek, Mich.

Miniature Clutch

A newly improved miniature clutch is said to make possible engagement or disengagement of any or all parts of

power transmission drive installations, such as tachometer or counter drives. Manufactured by Barbour-Stockwell, the Reliance miniature clutch is said to prolong instrument life and transmission equipment and also reduce service costs. It answers a need, says the company, where continuous rotation is not essential. Barbour-Stockwell Co. is at Cambridge, Mass.

New Y-Globe Valve



An all-plastic Y-globe valve with full flow passage has been introduced by the Walworth Co., 60 E. 42nd St., New York. Made of rigid polyvinyl chloride the new PVC valve provides tight shutoff and flow control of corrosive fluids. The new valve, non-toxic as well as non-corroding, assures fluid purity. A special bonnet and gland nut design provides an absolute leak-proof unit. The valve will operate successfully at pressures up to 150 psi at 75° F. The lightweight valve is available with threaded and solvent-weld socket-type ends for 1 in. pipe. Other sizes, from 1/2 through 2 in., will be available soon.

"Window Modernization"



"Suntrol" light-directing and heat-controlling glass blocks have solved a problem for Bermingham & Prosser Co., one of the country's largest paper merchants. A recently-acquired 324-ft. long building on busy West Ogden Ave., Chicago (portion shown above), not only presented a drab and unimpressive appearance but 39 loose and rusted-out metal sash windows that formed most of the front wall constituted a dirt and dust problem. With the front facing south and west, the problem was accentuated by excessive glare and heat penetration, causing discomfort for personnel and possible discoloration or fading of wrappers of high quality paper stock. "Suntrol"

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Special reports and tabulations, tailored to stated location requirements, will be prepared upon request by our engineering and economics staff from central data files and direct sources, covering:

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- MARKETS—Consumer, industrial product, state, regional.
- TRANSPORTATION—Water, rail, truck, air transit time, costs.
- FINANCING—Community-state industrial building program, lease-purchase, commercial credit.
- BUILDINGS—Availability, sizes, location, descriptions.
- SITES—Acreage, topography, utility services, photos, maps, industrial districts.
- MATERIALS—Metals, industrial chemicals, wood, textiles, farm products.
- MINERALS—Location, reserves, potentials, analyses.
- WATER—Quantitative, qualitative analyses.
- POWER—Capacity, network, industrial service, costs.
- FUEL—Coal, oil, natural gas service, costs.
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- TAXES—Inter-state and community comparisons, assessment ratios, millages, corporate.
- COMMUNITIES—Characteristics, size, regions, housing, schools, culture, recreation.

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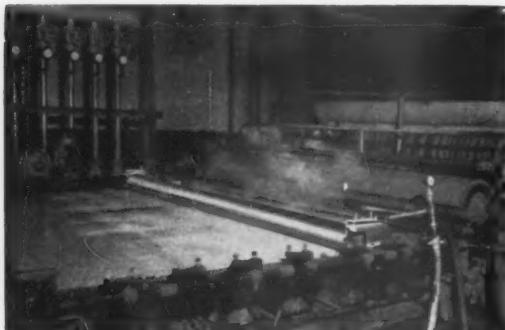
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- Changes Water Viscosity
THUS FREEING WET MAT
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Custom Built for Any Machine

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glass blocks, produced by Pittsburgh Corning Corp., installed to replace the old metal steel sash, solved the problem.

Guillotine Roll Splitter



Recently developed by Black-Clawson Co., Shartle Div., is this guillotine type roll splitter said to solve objectionable paper dust problems present when splitting reject rolls with various kinds of saws. Its hydraulically operated Ryerson VD tool steel knife will split a 60-in. dia. roll, 72-in. long in seconds. No adjustments for rolls of various diameters. The knife is replaceable. One man with a lift truck can safely position a roll, split it, remove it and tackle the next one within a minute, says Shartle.

Positioner Now Available



An electric-pneumatic positioner is now available as an integral component of Conoflow control valves. Features: all the rigid operating characteristics of the valve's standard pneumatic positioner, insofar as sensitivity and stability are concerned, and eliminates inherent transmission lag of all-pneumatic systems.

Motorized Hand Truck

The "E-Z Loader" is a new motorized hand truck which permits rapid loading, unloading and shorrange transport of bulky objects up to 1,000 lbs. It has 3 speeds forward and one for reverse and has a heavy-duty transmission. Gross weight: 275 lbs.; speed range: 4 mph. Manufactured by Walco Supply Co., Box 652, Glendora, Calif.

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PICTURES OF PEOPLE IN THE NEWS



Appleton Promotions

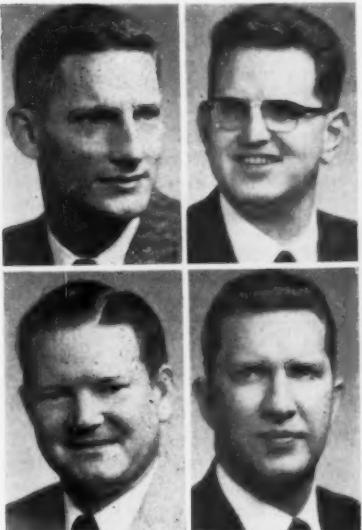
SMITH McLANDRESS (left), formerly eastern sales rep. for Appleton Wire Works, has been appointed director of sales, with ROBERT W. KRANZUSCH (right) taking over his previous position. Mr. McLandress is also a vice pres. of the Appleton, Wis., firm. Both men have been with the company for more than 20 years.



In Supply Co. News

DANIEL S. HEFFRON (left), director of sales for Quick-Way Truck Shovel Co., since 1944, has been named vice president, according to President Clinton D. St. Clair.

C. H. "BUTCH" BUTTERFIELD (right), formerly with Black-Clawson Co. and Downington and with 38 years in the paper mills and the industry, has been appointed sales engineer for Patton Mfg. Co., Inc. He is engineering graduate of Univ. of Cincinnati. He will handle sales of Patton products to integrated mills.



Officials in New Company

WILLIAM STREED (top left), pres., FRANK B. MOFFETT JR. (top right), vice pres., J. H. CORLEY (bottom left), mgr., and ERNEST W. PHARR JR. (bottom right), chief engr., are officers of Streed Products Corp., Gadsden, Ala. The new company will manufacture and fabricate alloy pipe, fittings, vessels, and piping accessories, and serve as consultants to Attalla Pipe and Foundry Co., Attalla, Ala.



New Post in Southeast

FANKLIN W. ELSER JR. has been promoted to sales engineer for E. D. Jones & Sons Co., covering southeastern U.S. with headquarters in Jacksonville, Fla. Prior to joining the Jones company in 1947, Mr. Elser was with Crane & Co.



Advancements in Sales Dept.

WILLIAM L. GILLESPIE (left) former mgr., Chicago district sales, Hooker Electrochemical Co., is now mgr., sales administration, at Niagara Falls, N.Y. JOHN T. WALMSLEY (right), former Hooker sales rep. for Mich. and northern Ind., replaces Mr. Gillespie in Chicago.



New Posts, West and East

E. A. BERRY (left) brings a background of papermaking into his recent assignment as West Coast sales representative for the Asten-Hill Mfg. Co. Mr. Berry graduated from the Univ. of Wash. College of Forestry and worked at Longview Fibre Co., Longview, Wash., from 1940-52, with time out for World War II service in coast artillery. From '52-'56 he covered the Pacific Northwest for Dorr-Oliver. Now he is associated with John Roslund, of Portland, Ore., Asten-Hill agent on the West Coast.

ALVIN H. POLLEY (right) comes to the Sutherland Refiner Corp., as chief engineer at their main office in Trenton, N.J. Mr. Polley was associated with S. D. Warren Co. and was then chief engineer for Dennison Mfg. Co.



New Posts for Starch Men

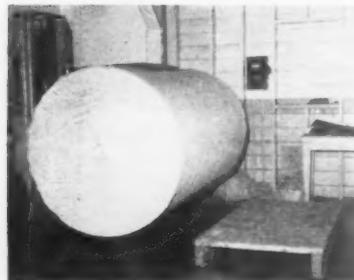
MILT BARBE (left) member of the Hubinger sales team more than 12 years, will headquartered in New Jersey and serve the Atlantic Coastal States. CARROLL TAYLOR (right), operating out of the Hubinger home office at Keokuk, Ia., will devote his 19 years of experience with the company's products to serving industries in the Midwest.



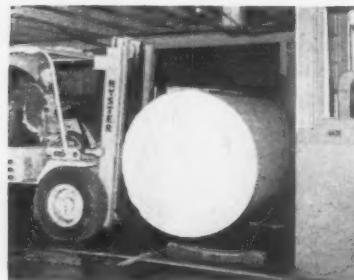
Meet for Sales Conference

Representatives of John W. Bolton & Sons, Inc. and Emerson Mfg. Co. Div., Lawrence, Mass., attended meetings which included seminar on stock treatment by Tech. Director George E. Soyka, inspection of new processing equipment and methods and evening's entertainment by Treas. A. L. Bolton Jr. Front row, seated: JOSEPH M. STEINER, mgr. Midwest region; OSCAR E. LARSON, mgr. Western region; HAIGH M. REINIGER, v.p. for sales; LAWRENCE E. MITCHELL, Emerson products sales mgr.; S. E. M. CROCKER JR., mgr. Southern region; ARTHUR G. SCHWARZENBERG, Bolton products sales mgr. Back row: F. RICHARD CONVEY, JAMES MAWDESLEY, JOHN L. SIGLER, ROBERT W. HOHMAN, JOHN E. BENEDICT, ALLAN L. JOHNSON, CHARLES A. MOORE, CORNELIUS E. SCOLLARD, RICHARD J. POWERS, JOHN W. BOLTON, director of research, and JOHN F. CROOK. Harry S. Van Ryper was absent due to illness.

HERE'S HOW CROWN ZELLERBACH LOADS 22 PAPER ROLLS (4000 lbs. ea.) IN 2 HRS. WITH HYSTER ROLL-GRAB



Picking up roll off skid.



Weighing, recording, stenciling.



Rotating roll to vertical while transporting.



Entering boxcar.

LEBANON, ORE.—Using a rotating Roll-Grab attachment on a Hyster 6000-lb. Lift Truck, this Crown Zellerbach plant is now loading 22 giant 4000-lb. rolls (53" dia., 73" long) into a double-door boxcar in approximately 2 hours.

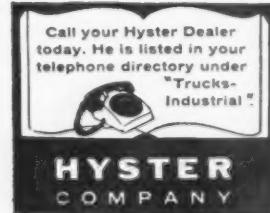
After picking up the roll and weighing (in a horizontal position) the Roll-Grab rotates the roll to a vertical position as the lift truck carries it into the boxcar, and deposits the rolls on end, two abreast.

Hydraulic power from the lift truck rotates the Roll-Grab and provides the clamping pressure which holds the paper roll safely in any position. The Hyster Lift Truck, mounted on pneumatic tires, easily and safely transports the heaviest rolls (up to 60" dia.) across wooden floors and steel plate decking into rail cars and truck vans. Company engineers state this method has materially speeded the loading cycle.

Your Hyster Dealer makes it his business to keep up with the materials handling progress in pulp and paper mills. Call him today. He will help you reduce your handling costs (perhaps as much as 80%)... and these savings go directly into *your* profits!



Depositing roll on end inside boxcar.



Hyster Industrial Trucks Increase Profits for Pulp and Paper Mills

2902-72 N. E. Clackamas.....Portland 8, Oregon
1010-72 Myers Street.....Danville, Illinois
Hyster N.V.Nijmegen, The Netherlands
FACTORIES: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands

LITERATURE

Select Belt Conveyor Idlers

A new method of selecting belt conveyor idlers for bulk material handling systems is introduced in Bulletin 56-80 of Chain Belt Co. The entire line of Rex-Rated belt conveyor idlers is covered. The bulletin includes idler selection charts and examples which enable the reader quickly to select the proper belt conveyor idler for his specific service requirements. Write for it to Chain Belt Co., Milwaukee 1, Wis.

How to Fabricate Stainless Steel

A 40-page manual which gives latest information on techniques for fabricating stainless steel can be ordered from Republic Steel Corp., Advertising Div., 3100 East 45th St., Cleveland 27, Ohio. Ask for form no. Adv. 590a.

Control for Automation

Development of the "Robotel" controller (U.S. Patent 2,768,369), a signaling system which provides an alarm and record of the malfunctioning of any component in demineralizing equipment which is intended to operate according to a predetermined program, is announced by Infilco Inc., manufacturers of water and waste treating equipment. The location of the function failure is immediately indicated, alarmed and recorded by this controller. It also provides for automatic shutdown of the programmed operation if desired. Write for free copy of Reprint 66 to Infilco Inc., P.O. Box 5033, Tucson, Ariz.

Pneumatic Computing Relay

New 4-page brochure describes features, application and operating characteristics of computing relay for pneumatic control systems, explaining proportional, reset and rate control actions, and providing equations of computing actions. Write for Product Specification P99-3 to Bailey Meter Co., 1037 Ivanhoe Rd., Cleveland 10, Ohio.

Power Unit Folder

International Harvester Co. has available an 8-page booklet on its line of 16 power units, entitled "International Power Units Make Your Most Profitable Power Partners." Photos and brief specifications of the power unit line are given. Request Booklet CR-513-G, International Harvester Co., Construction Equipment Div., 180 N. Michigan Ave., Chicago 1, Ill.

Cooling Towers

Pritchard LoLine cooling towers for air conditioning and industrial service featuring low silhouette and high performance are described in a new bulletin from J. F. Pritchard & Co., 4625 Roanoke Parkway, Kansas City 12, Mo.



"Don't Sell Short"

"Almost every forecaster has constantly underestimated the growth of the American economy in the last 10 years. So don't sell short in a basically bull market because of a temporary dip."—EDWARD J. VERITY, Lukens Steel Co.

RESEARCH BRIGHTENS FUTURE

"Optimism prevails within the paper and paperboard industry as to the outlook for the year 1957 and especially for the long-range future. Commerce Department field offices report that the substantial capacity expansions underway or scheduled for practically all grades of pulp, paper and board are being accompanied by stepped-up new-product development and market research to meet the growing demands and more meticulous specifications expected in the years ahead."—W. LeROY NEUBRECH, asst. director for pulp, paper and paperboard, Forest Products Div., U.S. Dept. of Commerce.

By Pipelines in Future

"Let's face it—pipelines offer the lowest cost, most trouble-free method of delivering anything to markets . . . and I want to emphasize the word 'anything.' There'll come a day, probably within the next ten years, when pulp will be transported extensively by pipeline. That's already being done in a modest way. But one of these days you'll see a pipeline bringing pulp from interior British Columbia, for instance, to the coast for processing. And it will be economically feasible."—GEORGE A. WILKINSON, president, Pipeline Contractors Assn. of Canada.

INDUSTRY MUST WIN GOOD NEIGHBORS

"It is wise to remember that seven or eight large forest industry companies (in British Columbia) would quickly be swamped in political importance by thousands of small logging and mill operators with their families, employees, friends and neighbors in the small villages and settlements they support. When spending a lifetime creating property, why not devote equal thought to creating good neighbors for that property so that the electorate will not be disposed to vote to take their revenge at the polls?" . . . H. R. MACMILLAN, former chairman, MacMillan & Bloedel, Ltd.



Using vertical polarized light on a cross-section of pipe, photographer Bernard Hoffman clearly shows the ravages of corrosive action.

Controlling Corrosion in Fluid Engineering

Corrosion seldom works alone. Together with heat, pressure and abrasion factors, it compounds the problems of fluid engineering. But when you have valve design problems involving corrosion, you can look to the engineering leadership available at S. Morgan Smith for assistance.

You can use R-S Rubber-lined Butterfly Valves, for instance, to handle many special applications. The rubber lining protects the entire valve body, gives you corrosion resistance with maximum economy. Where your processing problem demands additional engineering, you can draw on the broad SMS background of experience in specialized valve applications.

There is a complete SMS line—Rotovalves, R-S Butterfly Valves and Ball Valves—to meet your fluid control problems. To obtain full information, contact our nearest representative, or write S. Morgan Smith Company, York, Penna.



AFFILIATE: S. MORGAN SMITH, CANADA, LIMITED, TORONTO

Rotovalves • Ball Valves • R-S Butterfly Valves • Free-Discharge Valves • Liquid Heaters • Pumps • Hydraulic Turbines & Accessories

New Titanium Dioxide Plant

The Du Pont Co. will build its third plant for manufacturing titanium dioxide, the whitest white pigment known, on a 1500-acre site near New Johnsonville, Tenn. Employing an important new process for making the pigment, it will have a capacity of 125 tons of titanium dioxide a day. The white pigment is widely used in paper, plastics, and other products. The plant is expected to be in operation early in 1959, said Frederick H. Weismuller, general manager of DuPont's Pigments Dept., Wilmington, Del. The department's other titanium dioxide plants—at Baltimore, Md., and Edge Moor, Del.—are both undergoing expansion.

CAUSTIC-CHLORINE FOR CANADA—The first caustic-chlorine plant for Western Canada is scheduled to go on stream June, 1957. It will substantially augment Hooker Chemicals, Ltd.'s. deliveries to the Pacific Northwest.

TITANIUM PIGMENT RISE—A third boost in National Lead Co.'s. titanium pigment capacity is scheduled when expansion facilities are completed about mid-1958 at its St. Louis, Mo. plant. Some 25,000 tons of annual capacity will be added to total 83,000 tons.

PETROCHEMICALS ON THE WAY—A major expansion of petrochemical production at Port Neches, Tex. plant of Jefferson Chemical Co. will triple production facilities for ethylene, double capacity for ethylene glycol and increase by 50% production of ethylene oxide. In addition, a plant is to be constructed to produce chlorine for making ethylene oxide and ethylene dichloride. Resultant caustic soda will be marketed. Jefferson is owned equally by American Cyanamid Co. and Texas Co.

PRODUCES SYNTHETIC GLYCERIN—Synthetic glycerin in commercial quantities is being produced by the Dow Chemical Co. at its Texas division plant. Dow estimates that current market potentials are about 235 million lbs.

ANTI-BLOCKING AGENT—Aceto Chemical Co., Inc. has added Lauramide to its product line. It is useful

as an anti-blocking agent for vinyl copolymer lacquers used for coating papers.

"LOW-PRESSURE POLYETHYLENE"—Celanese Corp. of America recently started up its new 40 million lbs. a year plant for making polyolefin resins near Houston, Tex. Called Fortisan, it will reportedly open new fields for plastics and represents a major new plastic development. Products made from the new resin will have an unusual combination of rigidity, heat resistance, toughness and chemical inertness; will withstand prolonged exposure to live steam but will not become brittle even at 180° below zero F.

HTH TABLET HYPOCHLORINATOR—Fischer & Porter Co., Hatboro, Pa., has acquired from Olin Mathieson Chemical Corp. all sales, development and manufacturing rights to the HTH Tablet Hypochlorinator which was developed by Olin Mathieson in 1951. It is a device for continuous generation of chlorine solution from calcium hypochlorite tablets, combining the functions of tablet reservoir, dissolver and metering unit. Olin Mathieson will continue to produce and sell HTH tablets used in the apparatus.

"WATER CONDITIONED"...

ANOTHER REASON ... You can't beat HAMILTON Felts



The important question is not
"how wet should the felt be?"
It is, "how dry will the felt make the sheet?"

Most felts look alike at first glance.
But Hamilton Felts are "water conditioned" to
run out water like a sieve,
deliver dryer sheets to the driers, permit
operators to run machines at higher
speeds with fewer stops and less broke.
If this is what you want your felts to do
why not contact us this week?

HAM FELTZ says:

"An April Fool can feel twice as
foolish if he lets himself get hurt
any other day in the month".

Contributed by G.F.G. Chicago

SHULER & BENNINGHOFEN, HAMILTON, OHIO

Doesn't this look like

OPPORTUNITY IN RESEARCH?

If you want to solve tomorrow's problems today, there's a big opportunity for you at The Mead Corporation in Chillicothe, Ohio.

Research and development are important words at Mead. And we've just built a new million dollar research and development laboratory to prove it! Here, Mead scientists, using the most modern facilities and techniques, are rapidly pushing back the frontiers of knowledge in this vital industry. They're taking the lead in discovering new facts, solving new problems, creating exciting new products for the future.

There are opportunities now in this new, advanced Mead research program for qualified chemists, physicists, chemical and mechanical engineers. The opportunities will be growing ones because (1) The Mead Corporation is growing even faster than the fast-growing paper industry as a whole, and (2) Our research interests are among the broadest in the industry and are constantly expanding. Previous experience in the paper industry would be helpful, but not a requisite. If you are interested, write for an interview or send a complete resume to R. L. Warner, The Mead Corporation, Chillicothe, Ohio. If you would like more information about Mead, write Mr. Warner for a copy of our booklet describing Mead's opportunities for technical men.

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EXIST NOW FOR

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and Ph. D's.

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papers



Photomicrographs of microtome cross sections of wood chips show variations in wood fibre geometry across the width of a growth ring.



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GROUNDWOOD MEN— PULP AND PAPER

New 550 ton Groundwood Mill situated at Port Alberni, on Vancouver Island, British Columbia, has openings for young ambitious men with groundwood experience, to fill positions as Shift Supervisors (salaried), Screen Tenders, and Stone Sharpeners.

Write in confidence or apply in person to Personnel Department, MacMillan and Bloedel, Alberni Pulp and Paper Division, Port Alberni, British Columbia.

Include recent photograph, state age and marital status, education and a resume of experience.

RESEARCH CHEMIST

Leading New England Paper Mill producing high quality coated papers needs topnotch research chemist to work on paper coatings.

Applicants should have solid mathematical background with extensive training in organic or physical chemistry. Some experience in paper industry desirable.

This position offers a real challenge to the right man and provides an excellent opportunity for growth and advancement. Salary will be arranged.

Write immediately giving full details about yourself and your qualifications. All replies will be treated as strictly confidential. Write Box 294, PULP & PAPER, 370 Lexington Ave., New York, N. Y.

**RETIRED
SULFITE SUPERINTENDENT**

Man with experience as pulp mill superintendent (sulfite) part or full time. No objection if retired. Need as consultant and supervisor. Light, enjoyable work. Something new and profitable for use in sulfite mills. Salary or per diem basis, with expenses. Answer

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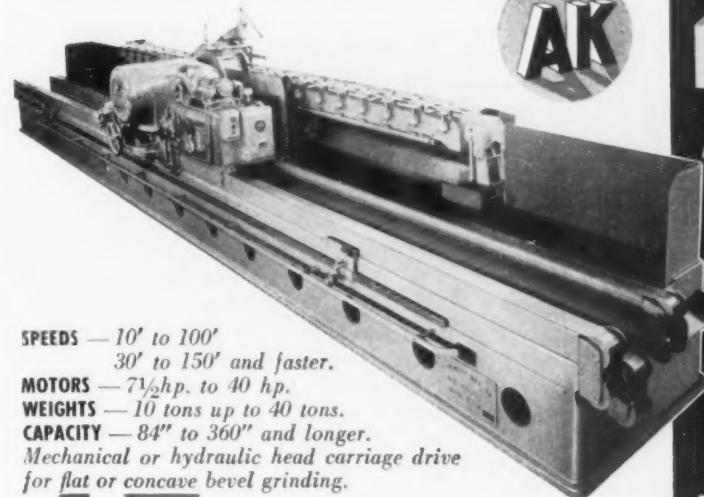
POSITIONS OPEN—MEN WANTED

Managers, superintendents, asst. supts., master mechanics, plant engineers, chemical engineers, salesmen and others. If available, SEND US YOUR RESUME. It will be in strictest confidence.

Charles P. Raymond Service, Inc.
294 Washington St. Boston 8, Mass.
Phone Liberty 2-6547

PRODUCTION MANAGER

Technically trained Production Superintendent desires a change of location. Experienced in several start ups and operations of bleached sulphate and newsprint manufacturing mills. Write Box 295, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.



SPEEDS — 10' to 100'
30' to 150' and faster.
MOTORS — 7½ hp. to 40 hp.
WEIGHTS — 10 tons up to 40 tons.
CAPACITY — 84" to 360" and longer.
Mechanical or hydraulic head carriage drive
for flat or concave bevel grinding.

Other Models. — medium heavy duty — capacity 32" to 184"
 — normal production — capacity 32" to 108"

HANCHETT MANUFACTURING COMPANY

World's Largest Manufacturer of Knife Grinding and Saw Sharpening Machinery
MAIN OFFICE — Big Rapids, Michigan
WEST COAST — Portland, Oregon

PAPER MEN

Whether you are an employer looking for the right man or an applicant looking for a better position, it will pay you to investigate our specialized placement service covering all phases of the Paper, Container and Packaging Industries.

- PRODUCTION
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A substantial number of exceptional men are now listed with us and are available almost immediately. Whatever your requirements, contact us in complete confidence without involving any obligation.

FRED J. STEFFENS
Personnel Consultant to the Paper
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Finest In Existence
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ENGINEER

For consulting firm in the pulp and paper field located in Wisconsin. Applicant must have good foundation in machine design as well as mill experience.

Good personality and ability to organize and plan ahead are important factors. Starting salary \$12,000.00 per year with future opportunity to become a member of the firm.

Please write us in confidence giving us a complete resume of your education and experience including recent photograph of yourself. We will then arrange for an interview to be held at your convenience. Box 293, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

Oregon Kraft Mill

has immediate openings for:

2 Project Chemists

1 Assistant Shift Foreman

Three to five years' experience in pulp and paper manufacture desirable. New modern plant, now doubling capacity, is located in scenic and uncrowded Pacific Northwest. This offers unique and challenging opportunity for young men interested in a management future. Send record of training and experience to: Western Kraft Corporation; American Bank Building; Portland, Oregon—Attention: C. R. Duffie. All replies confidential.

WANTED

Kraft Pulp Mill Superintendent, Chief Chemist, General Foremen, for 200 ton bleached Kraft Mill now under construction. Excellent location in established town, 30 miles east of Ottawa and 100 miles west of Montreal. Qualified applicants address replies with full particulars to:

Mill Manager, Thurso Pulp & Paper Company, Thurso, Quebec, Canada.

**SUPERINTENDENTS & CHEMISTS
RETIRING**

The high cost of living is daily shrinking retirement pensions. Even though your retirement may be some time in the future, nevertheless, now is the time to prepare for more comfortable days ahead. For details write Box 289, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

FOR ACCURACY — FINEST FINISHES

HANCHETT *knife grinders*

for the
**PULP AND PAPER
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**FOR GRINDING — HOG — BARKER
PAPER TRIMMER AND DOCTOR BLADES**

MODEL SK-24

the very finest

SLITTER KNIFE GRINDER

FOR TOP — BOTTOM SLITTERS
CAPACITY 3" TO 24" DIAMETER
SEMI OR FULL AUTOMATIC
FINEST IN ACCURACY AND FINISH

Neenah Firm Handles Robalit Line in Lake States

Ed P. Arpin, Jr., president of F. A. Leavens & Co., Neenah, Wis., announces that his firm has been selected by Orton Corp. to represent the latter in sale of the Robalit line of plastic impregnated leather products in Wisconsin, Minnesota and Michigan. Made by Joseph Poeschl's Sons, Rohrbach, Austria, the material has been used in European mills for suction box tops, wet doctor blades, forming boards and deflector blades.

The Neenah firm was founded around the turn of the century by the late Frank A. Leavens, and was incorporated in 1925. When Mr. Leavens died in 1938, he was succeeded by Mr. Arpin, who had been in the business about a year. Previously Mr. Arpin had 15 years experience in paper mills. He is a native of Wisconsin.

The company is agent for Knox Woolen Co. felts, William L. Barrell Co. Lawrence Duck dryer canvas and dryer felts and Wyandotte chemicals.

The new Robalit line is represented on the Pacific Coast by Milton J. McGuire, Portland, Ore., and elsewhere in the country by Orton Corp., headed by Sam Orton, Fitchburg, Mass.

New Bolton Knife Distributor

John W. Bolton & Sons, Inc., Lawrence, Mass. announces the appointment of Appleton Manufacturing Co., Appleton, Wis., as midwest distributor for their line of machine knives. The firm will handle Bolton paper trimming knives, slitters, rotary and sheeter knives, rag, hog and barker knives and others. Plans are in process to build an inventory of standard paper knives at Appleton to provide prompt delivery service. Special kinds and sizes will be fabricated on order at Lawrence.

Appleton representatives for Bolton are Fred Docter in Minn., Wis. and Mich., and Thomas Frawley in Ohio, Ind., Ill. and Iowa. Both men have recently completed a period of training at the Bolton plant.

Acme Announces Promotions

Guy T. Avery, president of Acme Steel Co. announces appointments of Bartlett Richards as vice president and presidential assistant, Harry R. Sanow as vice president of Riverdale operations and Joseph H. Myers as general supt., Riverdale plant.

Mr. Richards joined Acme in 1933 as a sales correspondent. In 1953, he was elected vice president of production. He is a graduate of Cornell Univ.

Pohl Heads Pigment Sales for DuPont

Robert H. Pohl is new director of sales, Pigments Dept., Du Pont Co., succeeding Frederic A. C. Wardenburg, appointed director of Du Pont's advertising.

Dr. Edwin A. Gee succeeds Mr. Pohl as assistant director of sales, Pigments Dept. and M. James McLain succeeds Dr. Gee as sales manager for pigment colors.

Mr. Pohl, who is 52, is a graduate of Pennsylvania Military College, has been with sale of Du Pont pigments since 1936.

Represents French wires

John G. Lederer, president of Mercefelt Corp., P.O. 688, Englewood, N.J., announces that his firm has been appointed American distributor of Martel-Catala (French) paper machine wires for all U.S., Alaska and Hawaii. Wires are manufactured by Martel, Catala & Cie, Selestat (Bas-Rhin) France.

New Hercules Appointment

Carl W. Eurenus, asst. general manager of Hercules Powder Co. Cellulose Products Dept., was named asst. general manager of the company's Paper Makers Chemical Dept., by Dr. John H. Long, general manager, PMC Dept.

WHEN SPECS CALL FOR...

ACID STORAGE TANKS

custom fabricated on the West Coast

Saves on transportation costs, manufacturing time and put yourself in a more competitive position by contacting an experienced "on the spot" source when planning the procurement of process and plant equipment for the West Coast. Send prints for prompt quotation on your next job.

Request Brochure No. P-57

PSF SINCE 1900

PUGET SOUND FABRICATORS, INC.

Craftsmen in Metals

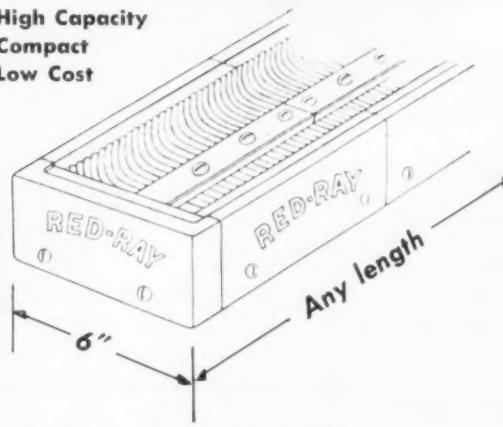
3670 E. Marginal Way • Seattle 4, Wash.

Craftsmen in steel plate and alloys up to 1"

RED-RAY BURNERS

For Faster Drying
PAPER • BOARD • COATINGS
INKS • HOT PRESS

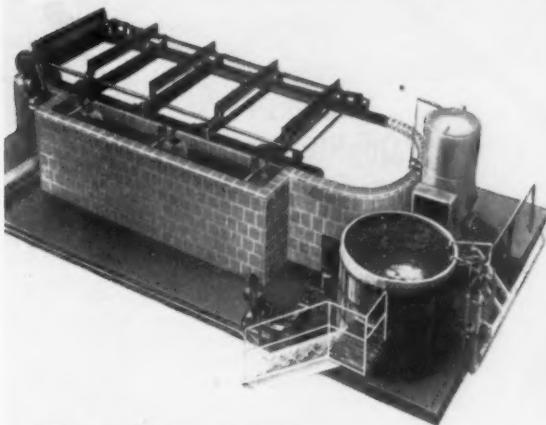
High Capacity
Compact
Low Cost



Heat delivered directly to material.
The advantages of Infra-Red, with the economy of gas.

Red-Ray Manufacturing Co., Inc.
318 Cliff Lane Cliffside Park, N. J.

BULKLEY-DUNTON FLOTATION SAVEALLS



**The Greatest
White Water Clarifier
in the Paper Industry!**

The first Flotation Savealls installed by Bulkley, Dunton in a United States paper mill — almost 20 years ago — are still operating with the minimum of supervision and maintenance. Since then, Bulkley, Dunton Savealls have become the standard of comparison throughout the paper industry.

Bulkley, Dunton Flotation Savealls recover valuable fiber and filler from white water in a matter of minutes permitting it to be returned immediately to process. The savings in filler and fiber, together with the B.T.U.'s in the clarified effluent, help pay for the installation in a short time. Frequently, the heat recovery is more important than the fiber.

Where stream pollution is a problem, Bulkley, Dunton Savealls may well be the most economical answer. One mill, reduced their fiber loss to 41 pounds per day . . . fifty four thousandths of 1% (0.054%) . . . well below the 1% required by law!

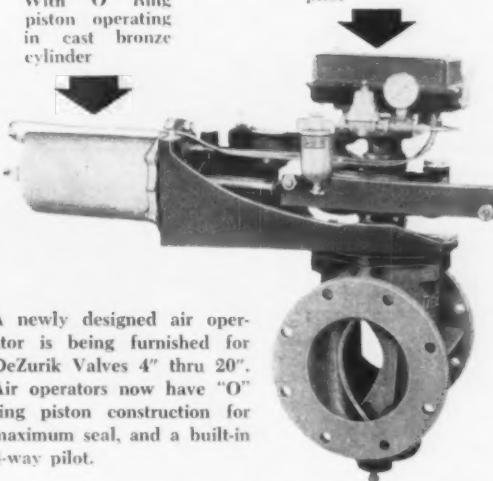
If you have a white water clarification problem, Bulkley, Dunton will survey your requirements and make recommendations . . . with no obligation. For information and literature, write today.

7-058

Bulkley, Dunton Processes, Inc.
295 MADISON AVE., NEW YORK 17, N.Y.

DeZurik CONTROL VALVES

NOW!
Characterized positioner with built-in 4-way pilot



A newly designed air operator is being furnished for DeZurik Valves 4" thru 20". Air operators now have "O" ring piston construction for maximum seal, and a built-in 4-way pilot.

"O" RING PISTON CONSTRUCTION

Air cylinder operators have "O" ring piston construction with a non-metallic material on the outer periphery of the piston acting as bearing material to protect the cylinder wall from mechanical damage. The "O" ring is inserted in a groove in this material and furnishes maximum seal and longevity.

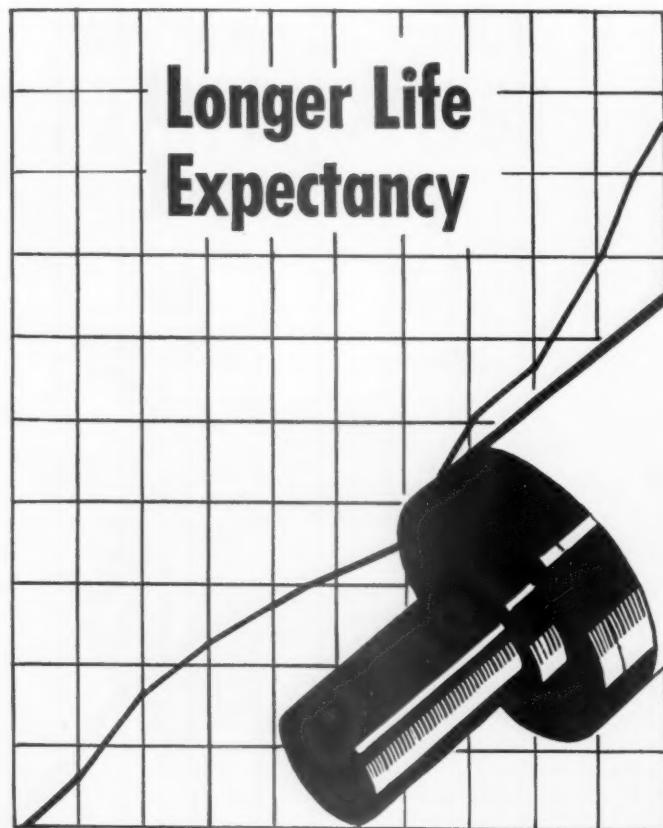
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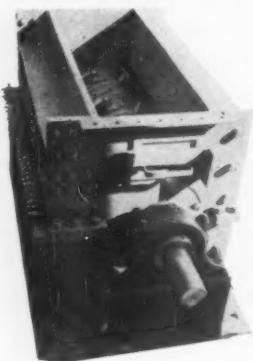
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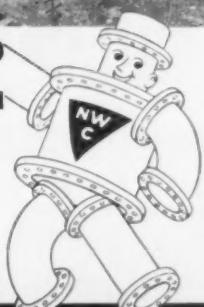
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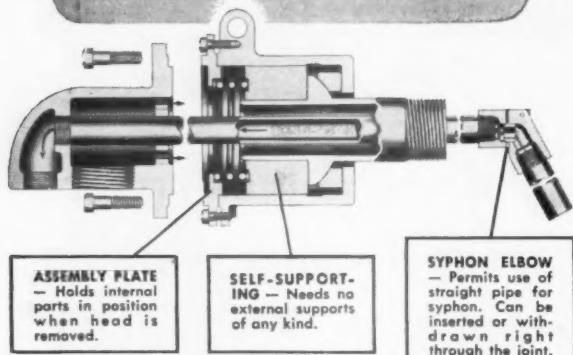
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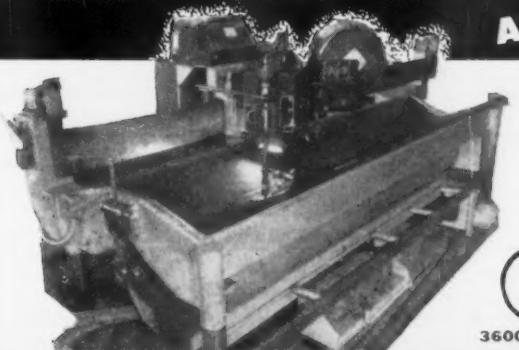
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A National Problem—Water

We have said before in this column that a young fellow who wants to get into something really important and critical in future years might give some thought to becoming a sanitary engineer or—in a broader sense—a specialist in water problems.

Water is probably the most necessary of nature's bounties enjoyed by man. As populations increase, and more people live and work along rivers and waterways, the problem becomes increasingly critical. The lowering underground water levels on which many paper mills are dependent, is also looming up as a growing problem.

Americans drink more than 40 million gals. of water per day. The entire national requirement averages 170 billion gals. a day. For each glass you drink, the national economy needs 250 gals. to keep going. Both demands are increasing. One sizable paper mill uses 20 to 30 million gals. a day or more.

Many of the nation's newspapers found no headlines in references by President Eisenhower to water in his State-of-the-Union message this year. Some papers hardly mentioned them.

Yet, he had as much or more to say about water—just water—some 350 words—as he did about inflation, agriculture, schools, U.S. finances or other headlined subjects. In other words, it was a major section of his address.

"I would like to make special mention of programs for making the best uses of water, rapidly becoming our most precious natural resource—just as it can be when neglected, a destroyer of life and wealth," he said.

He said only with a "partnership" of cities, states and federal government can best and most economical uses be achieved, and a "stifling centralized bureaucracy" be avoided. He was referring to all industrial uses, as well as power, irrigation, flood control, etc.

Conservation of water, soil, forests, fish and wildlife, he said, must not be the concern of the federal government alone. Private enterprise, state and local authorities—all these must be encouraged to participate in such projects.

The Chamber of Commerce of U.S. has come out for an impartial board of review of water resource matters, to give overall direction to vital development programs.

It is encouraging to note that an atmosphere is being created in Washington, and elsewhere, for broader long term unselfish thinking in regard to this truly grave national problem.

Straight Thinking About Capitalism

What does capitalism really mean?

We think that a recent analysis by Theodore V. House, chairman of the board, Sears, Roebuck & Co., Chicago, shows some straight thinking about that subject.

What he said is this:

"First, it is the recognition of the worker as a consumer, with wages as high and hours of work as low as productivity will permit.

"Second, a constant search to increase productivity per hour of work through applied scientific research, engineering, managerial skill and capital investment.

"Third, a competitive society in which the consumer is free to buy what he will and where he will, and with industry competing for the consumer's favor through mak-

ing goods more desirable or less costly.

"Fourth, recognition of growth as a national characteristic, and that growth comes from better plants, better machines, better trained workers and better products. Also essential to the concept of growth is the principle of modest profits with increasing turnover of capital rather than the limiting of volume through large per unit profits.

"A corollary to the foregoing is the obsolescence of equipment before it is worn out if more efficient and productive equipment is available.

"Which means that constant reinvestment of a sizable proportion of profits is necessary to provide for improvement and expansion."

Reading Habits of Busy Men

The typical executive or top supervisor spends about one-fourth of his waking hours with his nose in a business magazine or book, report or correspondence.

The American Management Association has completed a survey of his reading habits. It finds that the executive spends about four hours a day at his office and another hour at home on business reading.

Some of the office reading and, often, all of the home reading would be in PULP & PAPER in this industry.

Nevertheless, he finds ten hours a week for non-business reading, about half of this devoted to newspapers. Many business men like their relaxation reading to be fact-filled. A large majority prefer nonfiction.

We have heard some mill executives or mill supervisors and engineers complain that their reading load is heavy, and they have some gripes. They claim their time is often wasted by "wordy or repetitious material, poorly organized or unclear material, and material too late to be useful."

But it is interesting to note how much time is spent in business reading by the average person in responsible mill positions. Are you above or below this average—four hours in the office—one hour at home?

Doctor Does Paper a Good Turn

In their losing battle against paper, a few irresponsible marketers of glass bottles have spread many false rumors. And there have been cases where "captive" city councils or other administrative agencies passed laws against paper containers.

Dr. T. R. Van Dellen, assistant dean, Northwestern University school of medicine and health editor for the Chicago Tribune for 10 years, recently published a query from "Mrs. M.":

"I hear there is danger of developing cancer from drinking milk in waxed cartons. Is there anything to this story?"

His reply was simple and right to the point:

"No."

The widely read and respected physician-columnist also chose a good word as a heading for this little exchange:

"FABLE."

The paper industry owes a debt of gratitude to Dr. Van Dellen for exposing another ugly rumor about milk containers to the sunlight of truth.

ACTION MAY NOT ALWAYS bring happiness, but there is no action without it.—Beaconsfield

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